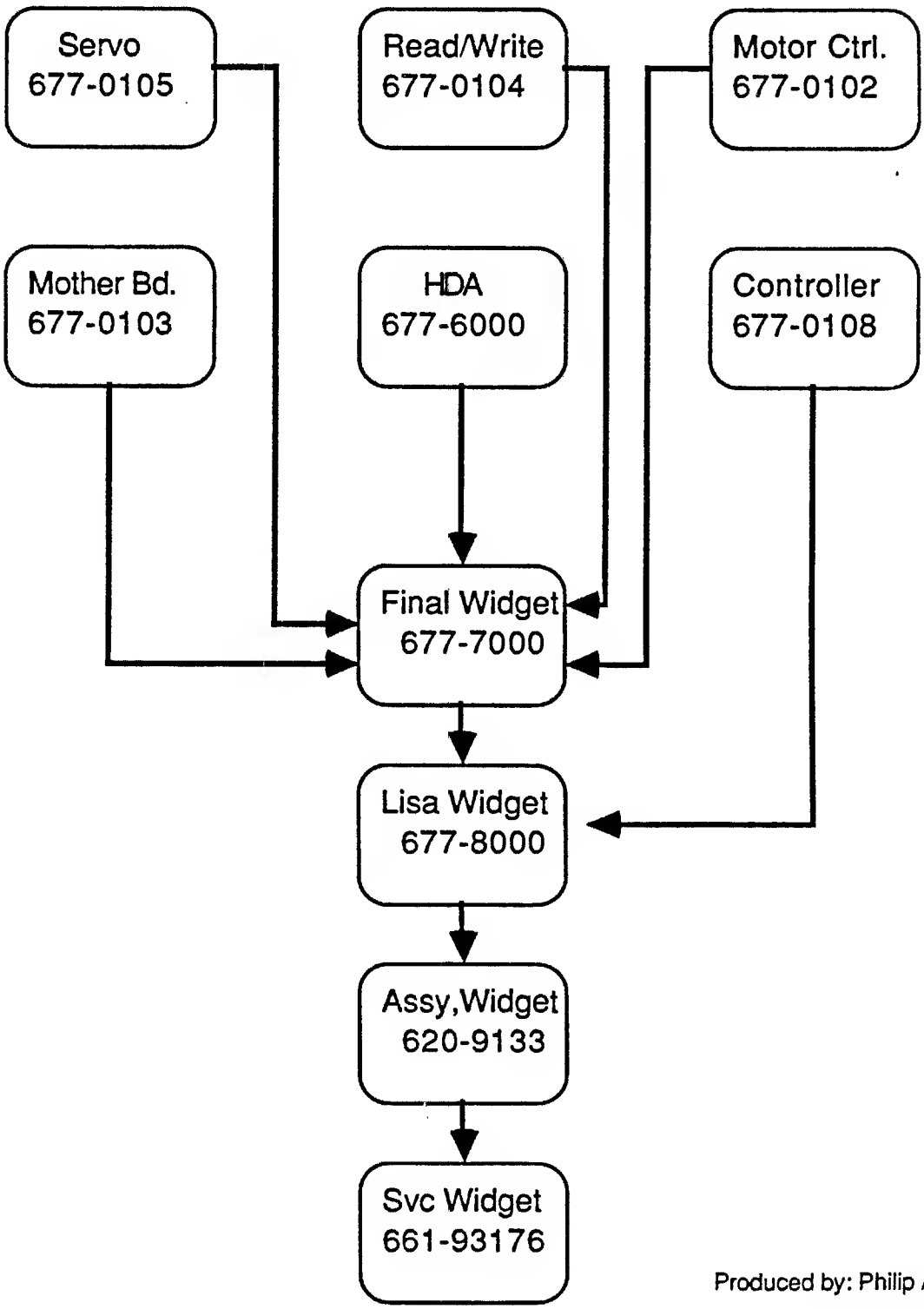
Widget Build Tree



Produced by: Philip Atwood

August 15,1985

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 661-93176 1 LISA 2/10 HDA SVCE STOCK UM: EA PROD CODE: ECN: S319 ASSEMBLY QTY: 1
ERC: A SRCE CODE: * TYPE: * ABC: * PLAN CODE: * DATE: 01-Mar-84

ITM NO.	COMPONENT PART NO.	P N D	E R C	DESCRIPTION / REMARKS	S PR CD	T R C	Y P	S P R	A B C	P L N	UM	EXTENDED QUANTITY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N	LT OPR SEQ	LT OF ST	STORES ACCNT
000	661-93176	D1	A	PKG.DWG.,LISA 2/10 HDA		*	*		*	*	EA	0	S319	01-Mar-84				1	0	
001	602-0048	1	B	ASSY, LISA DRIVE CARRIER, LISA 2		*	*		*	*	EA	1	J092	01-Mar-84				1	0	
002	946-0001	1	C	TAPE, SEALING GLASS WEB# 341	EX	X	7	P	B	P	RL	0.0080	474	01-Mar-84				1	0	
003	825-0317		A	LABEL, FRAGILE, PROFILE	EX	P	7		*	P	EA	4	P112	01-Mar-84				1	0	
004	665-93176	1	A	LISA 2/10 HDA EXCHANGED SUB.P/N ITEM 5		*	*		*	*	EA	0	S319	01-Mar-84				1	0	
005	620-9133	1	A	ASSY,HARD DISK,LISA 2/10,SERVICE SUB.P/N ITEM 4		*	*		*	*	EA	1	B516	01-Mar-84				1	0	

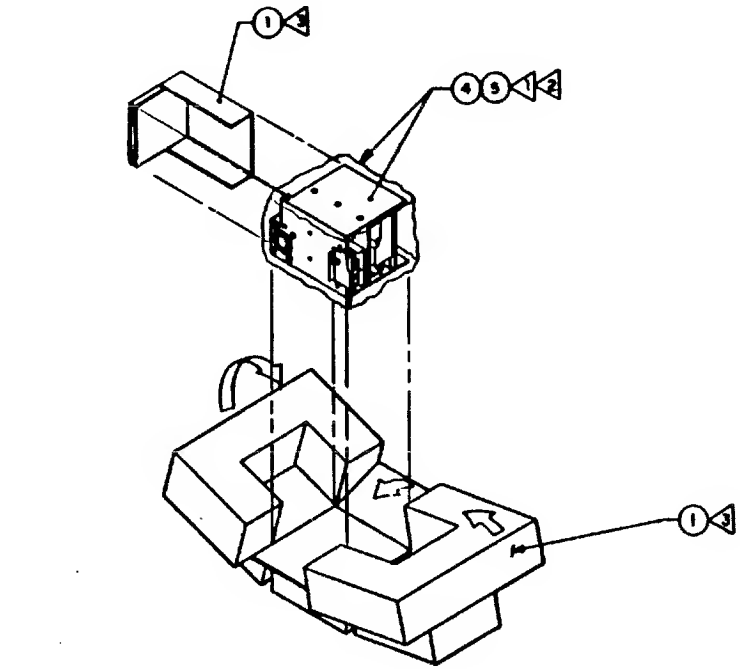
NOTES:

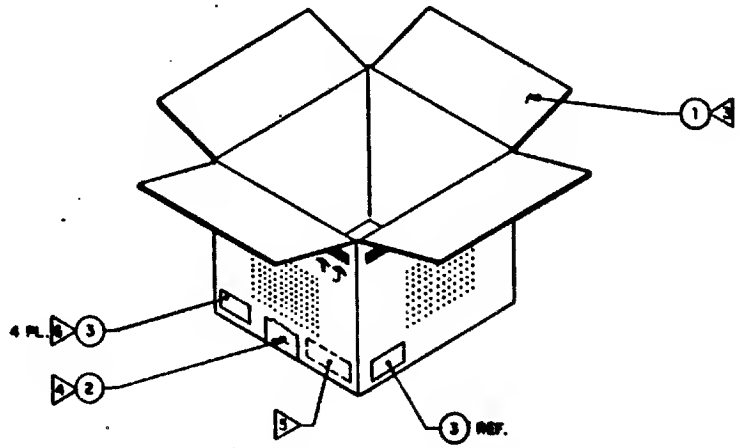
ECO S319:INITIAL RELEASE

END OF REPORT

NOTE: UNLESS OTHERWISE SPECIFIED

1. ITEMS 4 AND 5 ARE SUBSTITUTE PART NUMBERS. REFEREUCE BILL OF MATERIAL FOR PROPER ASSEMBLY TO BE SHIPPED.
2. PLACE HARD DISK ASSY. (ITEM 4 OR 5) IN BAG.(BAG INCLUDED WITH ITEM 4 OR 5).
3. CARRIER, COLLAR AND SPACER ARE INCLUDED IN HARD DISK CARRIER ASSY.(ITEM 1).
4. AFTER ASSEMBLY SEAL BOX WITH TAPE (ITEM 2)
5. STAMP OR LABEL END OF BOX WITH ASSEMBLY TITLE, PART NUMBER AND REVISION LEVEL.
6. APPLY LABEL ON ALL FOUR SIDES OF BOX.



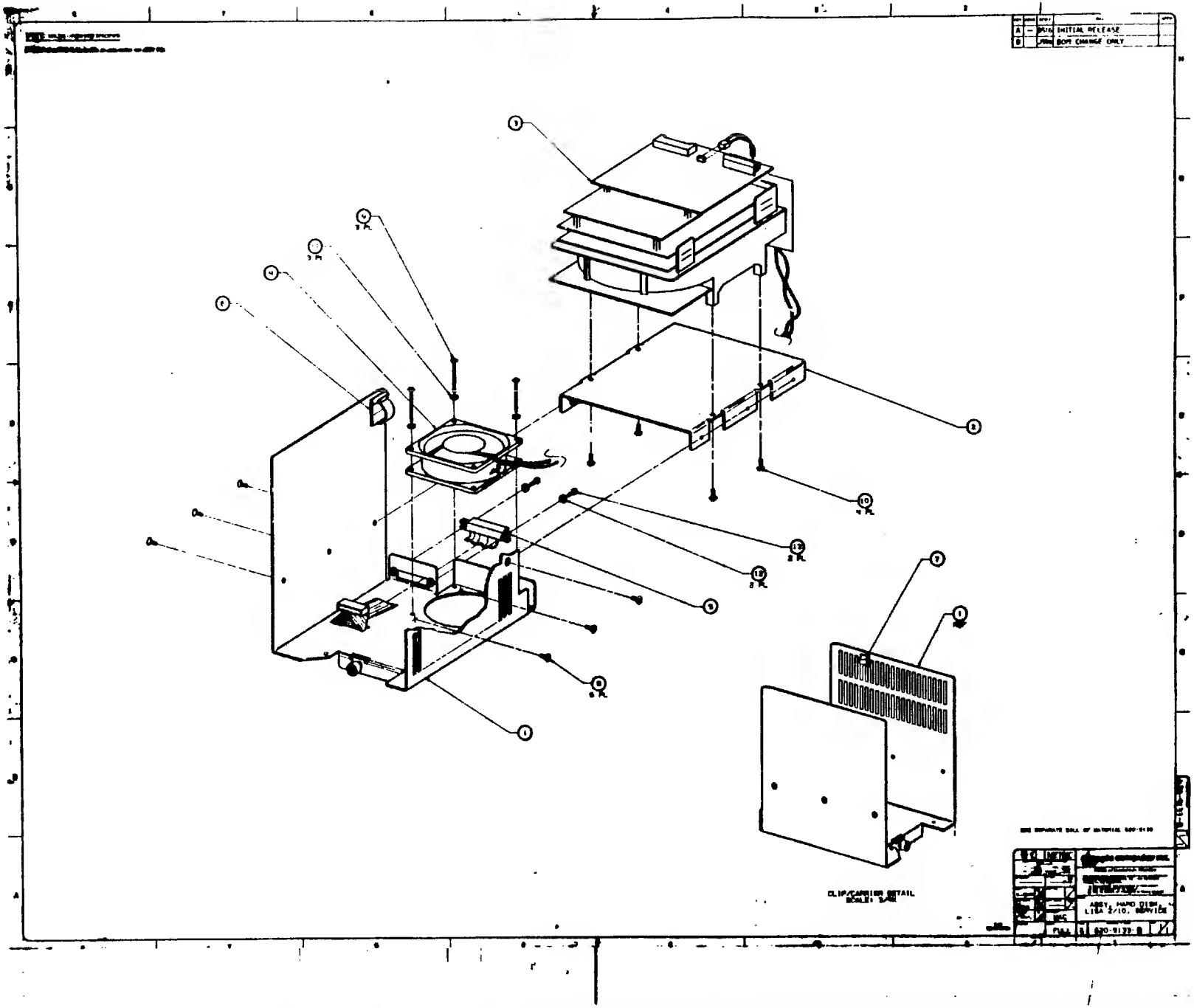


A			FINAL RELEASE
B	A1		TITLE WAS 3/5 HARD DISK ASSY LISA

SEE SEPARATE BILL OF MATERIAL : 661-9176

C	METRIC	apple computer inc.
	SERVICE	PACKAGING DRAWING HARD DISK ASSY. MACINTOSH XL
	1/8	D 661-9178-B 1/1

```
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                    **

 ^BMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1446
  XPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 620-9133                    EFF: DATE          SER NO          LOT NO
 PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                       ABBREVIATED                --EFFECTIVITY-- F                    E
 ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 001 805-4052          CARRIER, DISK DRIV ME  D 032684 123199 N         1.000 EA  Y
 002 805-4054          CARRIER SHELF, WID ME  D 032684 123199 N         1.000 EA  Y
 003 677-8000          ASSY.,FINAL,WIDGET ME  D 032684 123199 N         1.000 EA  Y
 004 720-0501          FAN,3 1/8"         ME  D 032684 123199 N         1.000 EA
 005 591-0017          CABLE ASSY, SONY E ME  D 032684 123199 N         1.000 EA  Y
 006 830-0028          CLIP,CABLE,ADH BAC ME  D 032684 123199 N         1.000 EA
 007 830-0027          CLIP,CABLE,ADH BAC ME  D 032684 123199 N         1.000 EA
 008 400-3604          SCR 6-32X1/4 FLT H ME  D 032684 123199 N         6.000 EA
 009 406-1620          SCREW 6-32X1 1/4 P ME  D 020585 123199 N         3.000 EA
 010 400-1604          SCR 6-32X1/4 PN HD ME  D 032684 123199 N         4.000 EA
 011 860-0251          WASHER, INT TOOTH  ME  D 032684 123199 N         3.000 EA
 012 860-0252          WASHER, INT TOOTH  ME  D 032684 123199 N         2.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                           **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1447
 EXPLOD1             PART COMPONENTS EXPL INQ - 1             01PMH            STEP

  SSY 620-9133                    EFF: DATE          SER NO          LOT NO
  _T       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                       ABBREVIATED                --EFFECTIVITY-- F                    E
 ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 013 400-1406          SCR 4-40X3/8 PN HD ME  D 032684 123199 N         2.000 EA
 014 944-0212          BAG,ANTI-STAT POLY ME  D 032684 123199 N         1.000 EA
```

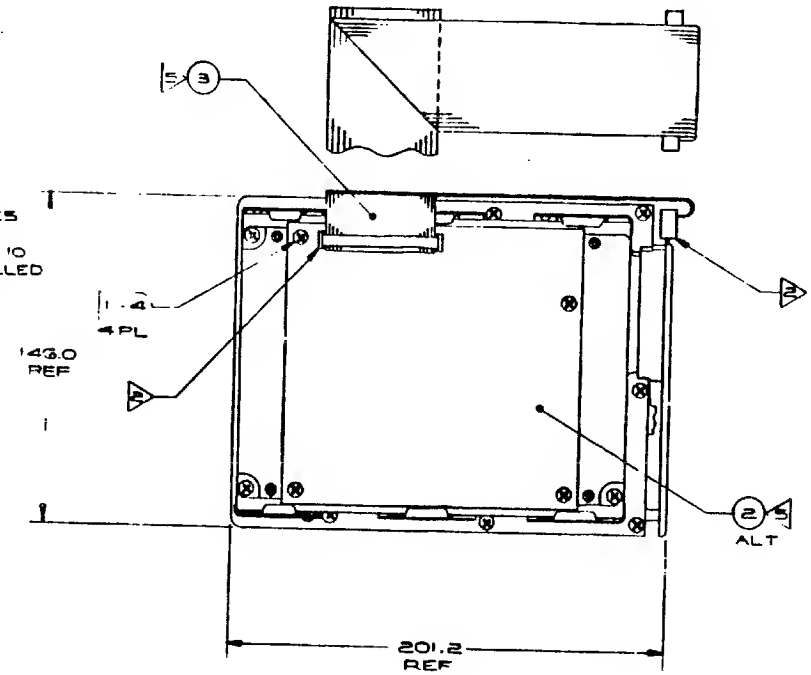

A — INITIAL RELEASE
B — BOM CHANGE ONLY
CLIP/CARRIER DETAIL

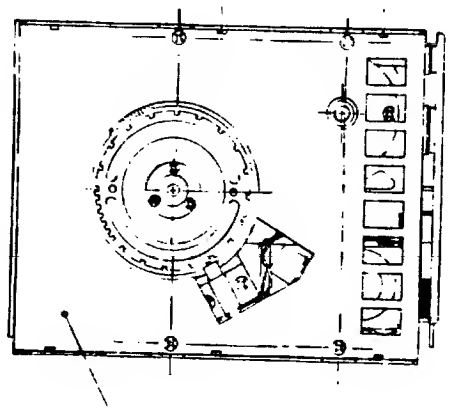
```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1445
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-8000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                  --EFFECTIVITY--  F                    E
ITM COMPONENT         DESCRIPTION          MOD TYP FROM   THRU     Q QTY PER ASSY UOM  X
001 677-7000          ASSY,FINAL,WIDGET    ME  D 121983 123199   N        1.000 EA   Y
002 677-4108          ASSY,PCB,TSTD LISA   ME  D 013184 123199   N        0.000 EA   Y
003 590-0207          ASSY,CA,INTCON,IDC   ME  D 121983 123199   N        0.000 EA   Y
004 400-1607          SCR 6-32X7/16 PN H   ME  D 121983 123199   N        4.000 EA
005 677-0108          ASSY,PCB,UNTSTD LI   ME  D 010101 013084   N        0.000 EA   Y
006 400-1603          SCR 6-32X3/16 PN H   ME  D 013184 123199   N        4.000 EA
007 805-4054          CARRIER SHELF, WID   ME  D 013184 123199   N        1.000 EA   Y
008 677-4110          ASSY,PCB,TSTD LISA   ME  D 051484 123199   N        0.000 EA   Y
009 590-0222          CABLE ASSY,MTHR BD   ME  D 071984 123199   N        1.000 FT   Y
010 677-9110          ASSY,PCB,T&BI,LISA   ME  D 101084 123199   N        1.000 EA   Y


 EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1   NEXT KEY :
DC700012 END OF LIST                    **
```

NOTE: UNLESS OTHERWISE SPECIFIED

1. TORQUE SCREWS (ITEMS 4 & 6) TO 10 IN/LBS.
2. CONNECT CABLE ASSEMBLY (ITEM 3 OR 9) TO CONTROLLER BOARD, CONNECTOR J3 AND MOTHER BOARD, CONNECTOR J3. CABLE TO BE ROUTED AS SHOWN.
3. SHEET 1 DEPICTS WIDGET ASSY USING 4-LAYER LISA CONTROLLER PC B (ITM 2)
4. SHEET 2 DEPICTS WIDGET ASSY USING 2-LAYER LISA CONTROLLER P C B (ITM 8 OR 10)
5. LISA / WIDGET CONTROLLER P C B'S AND CABLES ARE TO BE USED AS FOLLOWS:
   A. ITEMS 2 AND 8 ARE ALTERNATES FOR ITM 10
   B. ITEM 3 MUST BE USED WHEN ITM 2 IS INSTALLED
   C. ITEM 9 MUST BE USED WHEN EITHER ITM 8 OR 10 IS INSTALLED

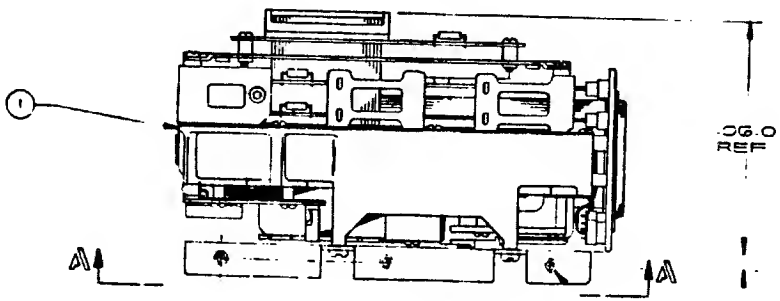
REV	ZONE	E.C.O.	DESCRIPTION	APPD
A		P695	INITIAL RELEASE (SK-W230)	
B		P750	ADDED VIEW A-A ADDED ITEMS 9 & 10	
B	2C	P777	ADDED ITEMS 8 & 9 AS ALT P.N. ITEMS 2 & 3, ADDED NOTE 2 AND SHEET 2.	
B		P814	RECORD CHANGE ONLY. BOM CHANGE	
B	4D	P827	RECORD CHANGE ONLY. BOM CHANGE SHEET 1: REVISED NOTE 5 ADDED NOTES 4 & 5 PICTORIALLY DELETED SERIAL NO. LABEL	
	2B		ADDED 4-LAYER CONTROLLER ASSY	
	1A		SHEET 2: ADDED ITM 10 CALLOUT AND "2-LAYER CONTROLLER ASSY"	
	2B		DELETED "ALTERNATE CONFIGURATION".	
	1A			
	2A			





VIEW A-A

4 PL



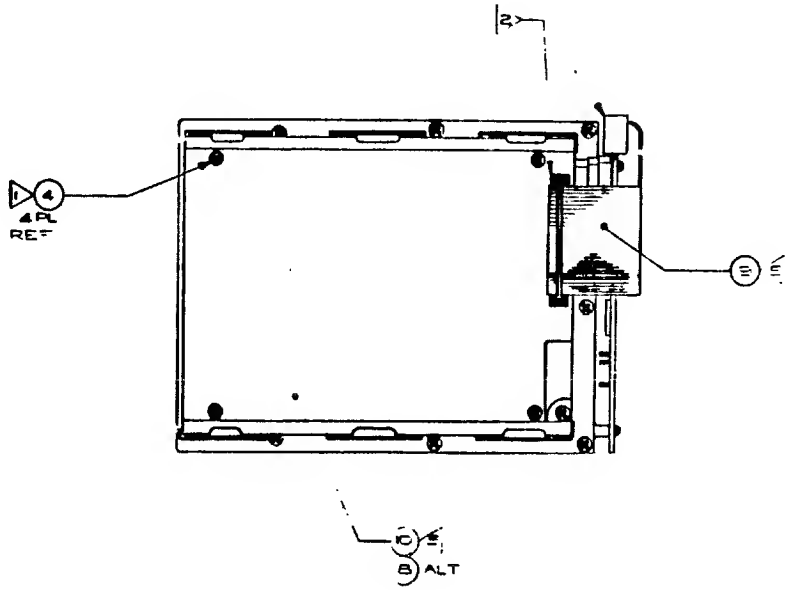
SEE SEPARATE BILL OF MATL 677-8000

3 4-LAYER CONTROLLER ASSY

	METRIC	apple computer inc.
	APD/VOD	ASSEMBLY, WIDGET, LISA
	FULL	B 677-8000-B 1/2

677-8000-B 1/2

NOTE: UNLESS OTHERWISE SPECIFIED



METRIC

apple computer inc.

ASSEMBLY,
WIDGET, LISA

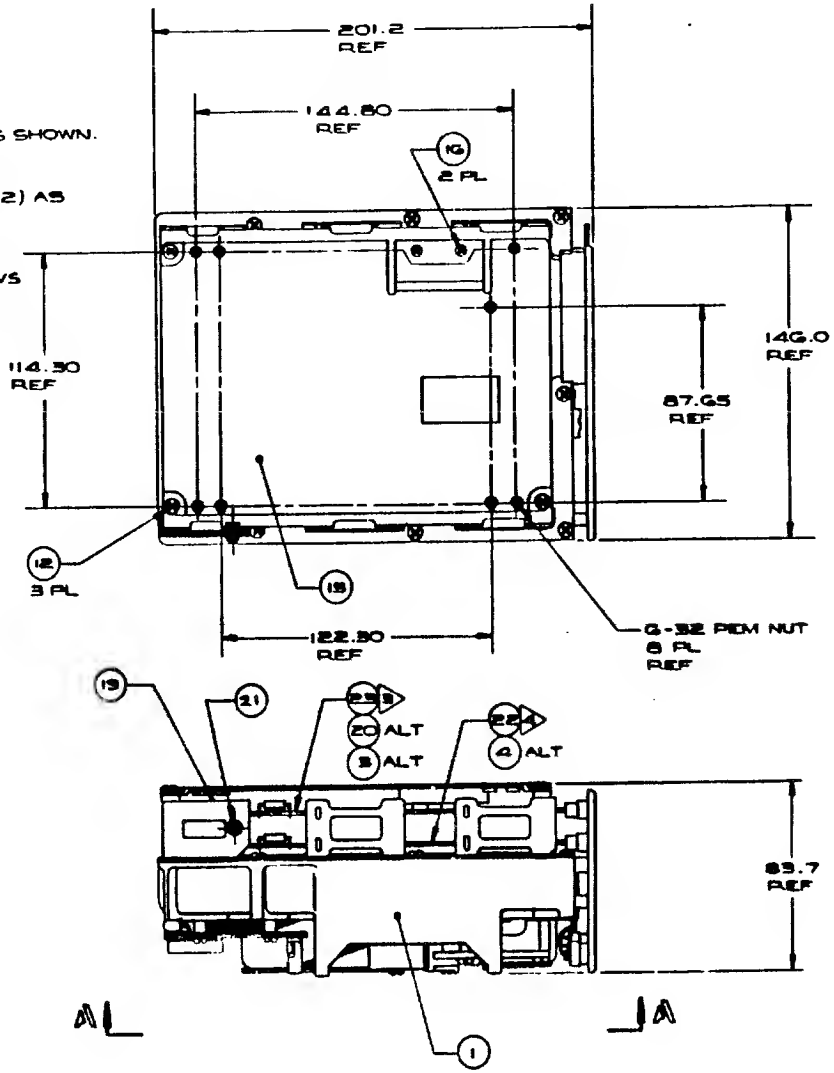
FULL

D 000-B 2/2

```
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                    **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0915
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 677-7000                      EFF: DATE          SER NO          LOT NO
 PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                       ABBREVIATED                --EFFECTIVITY-- F                    E
 ITM COMPONENT         DESCRIPTION         MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 001 677-6000          ASSY,HEAD/DISK,WID ME   D 121983 123199 N         1.000 EA   Y
 002 677-0103          ASSY,PCB,UNTSTD,MO ME   D 121983 013084 N         0.000 EA   Y
 003 677-4105          ASSY,PCB,TSTD SERV ME   D 013184 123199 N         0.000 EA   Y
 004 677-4104          ASSY,PCB,TSTD READ ME   D 013184 123199 N         0.000 EA   Y
 005 677-0102          ASY,UNTSTD,MOTOR C ME   D 010101 013084 N         0.000 EA   Y
 006 830-0056          MOUNT,CABLE TIE,AD ME   D 121983 013084 N         0.000 EA
 007 805-5027          SHLD W/FLNGE,MTHR  ME   D 121983 123199 N         1.000 EA
 008 725-0012          INSULATOR,MYLAR,.0 ME   D 121983 123199 N         1.000 EA
 009 860-0320          SHIELD-ISOLATION,M ME   D 121983 013084 N         0.000 EA
 010 590-0204          CABLE ASSY,AWG.22, ME   D 121983 013084 N         0.000 EA   Y
 011 918-0104          TORQUE SEAL, BLUE, ME   D 121983 013084 N         0.000 EA
   2 400-1604          SCR 6-32X1/4 PN HD ME   D 121983 123199 N         3.000 EA
  PLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                           **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0916
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 677-7000                      EFF: DATE          SER NO          LOT NO
 PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                       ABBREVIATED                --EFFECTIVITY-- F                    E
 ITM COMPONENT         DESCRIPTION         MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 013 830-0027          CLIP,CABLE,ADH BAC ME   D 121983 013084 N         0.000 EA
 014 830-0031          TIE WRAP, 3.800LG  ME   D 121983 013084 N         0.000 EA
 015 699-5007          SHIELD,SERVO BD.,W ME   D 121983 123199 N         1.000 EA
 016 400-1404          SCR 4-40X1/4 PN HD ME   D 121983 123199 N         2.000 EA
 017 677-0105          ASSY,PCB,UNTSTD,SE ME   D 010101 013084 N         0.000 EA   Y
 018 677-0104          ASSY,PCB,UNTSTD,RE ME   D 010101 013084 N         0.000 EA   Y
 019 805-5034          RETAINER,PCB  WIDG ME   D 060184 123199 N         1.000 EA
 020 677-4109          ASSY,PCB,TSTD,SERV ME   D 070584 123199 N         0.000 EA   Y
 021 407-0404          SCR 4-40X1/4 BTN H ME   D 060184 123199 N         1.000 EA
 022 677-9104          ASSY,PCB,T&BI,R/W  ME   D 101084 123199 N         1.000 EA   Y
 023 677-9109          ASSY,PCB,T&BI,SERV ME   D 101084 123199 N         1.000 EA   Y

  PLOSION LEVEL :    1

  XT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                    **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0916
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            ST
```

NOTE: UNLESS OTHERWISE SPECIFIED

1. FOR UNSPECIFIED MECHANICAL AND ELECTRICAL REQUIREMENTS, REFER TO WIDGET SPECIFICATION 088-6001.
2. UNLESS OTHERWISE SPECIFIED, TORQUE ALL SCREWS TO 10 IN/LBS.
3. LOCATE SERVO BOARD (ITEM 3, 20 OR 23) AS SHOWN. BOARD MUST MATE WITH MOTHER BOARD, CONNECTOR J1.
4. LOCATE READ/WRITE BOARD (ITEM 4 OR 22) AS SHOWN. BOARD MUST MATE WITH MOTHER BOARD, CONNECTOR J2.
5. PRIOR TO INSTALLATION OF SHIELD (ITEM 7) AND INSULATOR (ITEM 8), REMOVE 2 SCREWS FROM HEAD/DISK ASSEMBLY IN LOCATION SHOWN. USE THESE SCREWS TO ASSEMBLE SHIELD AND INSULATOR AS SHOWN.



REV	ZONE	ECO #	REVISION	APPD
A		PG85	INITIAL RELEASE. (SK-W213-01)	
B		PT20	DELETED NOTES 5 THRU 15. DELETED ITEMS 2, 5 THRU 11, 13 AND 14.	
C	5B		SHT 1: REMOVED PICTURE OF SPRING RETAINER, 3PL.	
	5C			
	5D		ADDED ITEMS 19 & 21.	
	2A	P771	REMOVED PICTURE OF "APPLE COMPUTER" SERIAL NO. LABEL. ADDED NOTE 5	
	4C		SHT 2: ADDED ITEM 20 AS AN ALT P/N FOR ITEM 3.	
	5B		UPDATED OUTLINE OF INDEX SENSOR CLAMP ADDED ITEMS 7 & 8.	
C	5B	P1876	RECORD CHANGE ONLY ADDED CALLOUTS FOR ITMS 22 & 23.	
	2B		ADDED "ALT" TO ITM 3 & 4 CALLOUTS.	
	4D		NOTE 3: "ITEM 3, 20 OR 23" WAS "ITEM 3 OR 20". NOTE 4: "ITEM 4 OR 22" WAS "ITEM 4".	

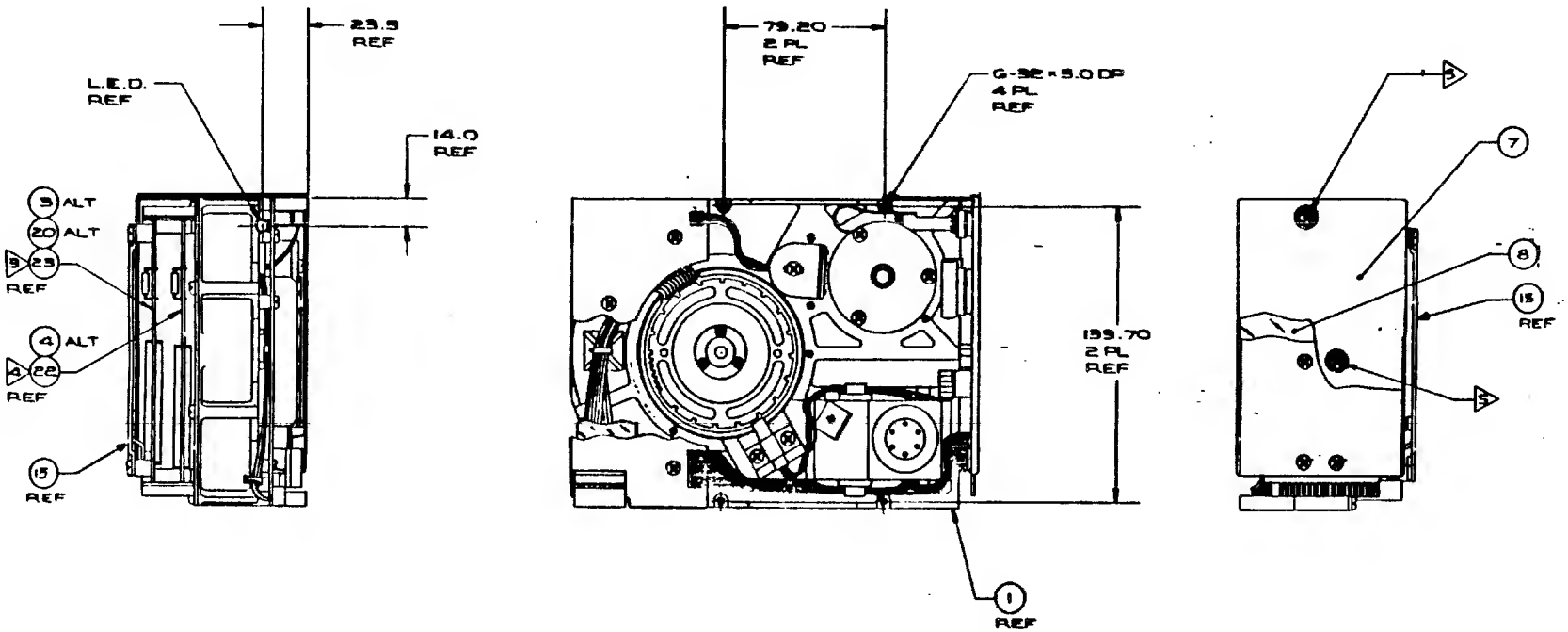
SEE SEPARATE BILL OF MATL: 677-7000

METRIC	apple computer inc.		
M.S.D.	ASSEMBLY, FINAL, WIDGET		
FULL	B	677-7000-C	1/2

677-7000-C 1/2

NOTE: UNLESS OTHERWISE SPECIFIED

SHT	ZONE	ECO #	REVISION	APPD
			SEE SHEET 1	



VIEW A-A

677-7000-C 2/2

	METRIC	apple computer inc.
		ASSEMBLY, FINAL, WIDGET
		D 677-7000-C 2/2

```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1144
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH          STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 25 699-0207          SPINDLEMOTOR ASSY, ME  D 013184 123199 N        1.000 EA
026 699-5004          ASSY,INDEX SENSOR  ME  D 013184 123199 N        1.000 EA
027 815-5028          FILTER, BREATHER,  ME  D 013184 123199 N        1.000 EA
028 830-0091          PIN,SCALE,ALIGNMEN ME  D 013184 112584 N        2.000 EA
029 699-5002          ASSY,BRAKE,WIDGET  ME  D 013184 123199 N        1.000 EA
030 699-5006          ASSY.,ACTUATOR MOT ME  D 013184 123199 N        1.000 EA
031 805-5021          FILTER,RECIRCULATI ME  D 013184 123199 N        1.000 EA
032 860-0110          SPACER,.117LX.315I ME  D 013184 123199 N        1.000 EA
033 677-4102          ASSY,PCB,TSTD MOTO ME  D 013184 123199 N        1.000 EA   Y
034 677-0103          ASSY,PCB,UNTSTD,MO ME  D 013184 123199 N        1.000 EA   Y
035 800-5030          COUNTERWEIGHT,ARM, ME  D 013184 123199 N        0.000 EA
036 590-0204          CABLE ASSY,AWG.22, ME  D 013184 123199 N        1.000 EA   Y
EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                        **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1145
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH          STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
037 677-5013          SUBASSY,ARM,WIDGET ME  D 013184 123199 N        1.000 EA   Y
 38 400-1614          SCR 6-32X7/8 PN HD ME  D 013184 073084 N        1.000 EA
039 907-0019          CEMENT (LOCTITE 42 ME  D 013184 123199 N        0.000 OZ
040 830-0027          CLIP,CABLE,ADH BAC ME  D 013184 123199 N        1.000 EA
041 825-5023          LABEL,SERIAL NUMBE ME  D 013184 123199 N        1.000 EA
042 830-0056          MOUNT,CABLE TIE,AD ME  D 013184 123199 N        2.000 EA
043 860-0320          SHIELD-ISOLATION,M ME  D 013184 123199 N        1.000 EA
044 830-0031          TIE WRAP, 3.800LG  ME  D 013184 123199 N        4.000 EA
045 805-5027          SHLD W/FLNGE,MTHR  ME  D 012984 073084 N        0.000 EA
046 725-0012          INSULATOR,MYLAR,.0 ME  D 013184 073084 N        0.000 EA
047 406-1604          SCR 6-32X1/4 PN HD ME  D 013184 123199 N        4.000 EA
048 406-1406          SCR 4-40X3/8 PN HD ME  D 013184 123199 N        2.000 EA
EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                        **
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ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1144
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
025 699-0207          SPINDLEMOTOR ASSY, ME  D 013184 123199 N        1.000 EA
026 699-5004          ASSY,INDEX SENSOR  ME  D 013184 123199 N        1.000 EA
027 815-5028          FILTER, BREATHER,  ME  D 013184 123199 N        1.000 EA
028 830-0091          PIN,SCALE,ALIGNMEN ME  D 013184 112584 N        2.000 EA
029 699-5002          ASSY,BRAKE,WIDGET  ME  D 013184 123199 N        1.000 EA
030 699-5006          ASSY.,ACTUATOR MOT ME  D 013184 123199 N        1.000 EA
031 805-5021          FILTER,RECIRCULATI ME  D 013184 123199 N        1.000 EA
032 860-0110          SPACER,.117LX.315I ME  D 013184 123199 N        1.000 EA
033 677-4102          ASSY,PCB,TSTD MOTO ME  D 013184 123199 N        1.000 EA  Y
034 677-0103          ASSY,PCB,UNTSTD,MO ME  D 013184 123199 N        1.000 EA  Y
035 800-5030          COUNTERWEIGHT,ARM, ME  D 013184 123199 N        0.000 EA
036 590-0204          CABLE ASSY,AWG.22, ME  D 013184 123199 N        1.000 EA  Y
EXPLOSION LEVEL :   1

NEXT RESPONSE : EXPLOD1   NEXT KEY :
DC700011 MORE                        **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1145
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
037 677-5013          SUBASSY,ARM,WIDGET ME  D 013184 123199 N        1.000 EA  Y
038 400-1614          SCR 6-32X7/8 PN HD ME  D 013184 073084 N        1.000 EA
039 907-0019          CEMENT (LOCTITE 42 ME  D 013184 123199 N        0.000 OZ
040 830-0027          CLIP,CABLE,ADH BAC ME  D 013184 123199 N        1.000 EA
041 825-5023          LABEL,SERIAL NUMBE ME  D 013184 123199 N        1.000 EA
042 830-0056          MOUNT,CABLE TIE,AD ME  D 013184 123199 N        2.000 EA
043 860-0320          SHIELD-ISOLATION,M ME  D 013184 123199 N        1.000 EA
044 830-0031          TIE WRAP, 3.800LG  ME  D 013184 123199 N        4.000 EA
045 805-5027          SHLD W/FLNGE,MTHR  ME  D 012984 073084 N        0.000 EA
046 725-0012          INSULATOR,MYLAR,.0 ME  D 013184 073084 N        0.000 EA
047 406-1604          SCR 6-32X1/4 PN HD ME  D 013184 123199 N        4.000 EA
048 406-1406          SCR 4-40X3/8 PN HD ME  D 013184 123199 N        2.000 EA
EXPLOSION LEVEL :   1

NEXT RESPONSE : EXPLOD1   NEXT KEY :
DC700011 MORE                        **
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⌐BMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1145
EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
049 907-0022          ADHESIVE,SEALANT,T ME   D 013184 123199 N        0.002 EA
050 400-1603          SCR 6-32X3/16 PN H ME   D 050784 123199 N        2.000 EA
051 400-1616          SCR 6-32X1 PN CRS  ME   D 073184 123199 N        1.000 EA
052 870-0076          WASHER,#6 .156 ID  ME   D 073184 123199 N        2.000 EA
053 800-5082          SCALE,GLASS-WIDGET ME   D 073184 123199 N        1.000 EA
054 800-5081          BAR,SPCR,GLS SCL,M ME   D 073184 123199 N        1.000 EA
055 406-1203          SCR 2-56X3/16 PN C ME   D 073184 112584 N        0.000 EA
056 860-0640          SHIM,GLASS AMBER   ME   D 073184 123199 N        0.000 EA
057 860-0641          SHIM,GLASS-RED     ME   D 073184 123199 N        1.000 EA
058 860-0642          SHIM,GLASS-GREEN   ME   D 073184 123199 N        1:000 EA
059 860-0643          SHIM,GLASS-TAN     ME   D 073184 123199 N        1.000 EA
060 860-0644          SHIM,GLASS-BLUE    ME   D 073184 123199 N        1.000 EA
EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

⌐BMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1146
 XPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
061 860-0645          SHIM,GLASS-BROWN   ME   D 073184 123199 N        2.000 EA
062 830-0092          PIN,GLS SCL,ALIGNM ME   D 073184 123199 N        2.000 EA
063 677-9102          ASSY,PCB,T&BI,MTR  ME   D 101084 123199 N        1.000 EA  Y
064 406-1204          SCR 2-56X1/4 PN CR ME   D 112684 123199 N        2.000 EA

EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                   **
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```
¬BMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1145
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                  E
ITM COMPONENT         DESCRIPTION          MOD TYP FROM   THRU  Q QTY PER ASSY UOM X
049 907-0022          ADHESIVE,SEALANT,T   ME  D 013184 123199 N        0.002 EA
050 400-1603          SCR 6-32X3/16 PN H   ME  D 050784 123199 N        2.000 EA
051 400-1616          SCR 6-32X1 PN CRS    ME  D 073184 123199 N        1.000 EA
052 870-0076          WASHER,#6 .156 ID    ME  D 073184 123199 N        2.000 EA
053 800-5082          SCALE,GLASS-WIDGET   ME  D 073184 123199 N        1.000 EA
054 800-5081          BAR,SPCR,GLS SCL,M   ME  D 073184 123199 N        1.000 EA
055 406-1203          SCR 2-56X3/16 PN C   ME  D 073184 112584 N        0.000 EA
056 860-0640          SHIM,GLASS AMBER     ME  D 073184 123199 N        0.000 EA
057 860-0641          SHIM,GLASS-RED       ME  D 073184 123199 N        1.000 EA
058 860-0642          SHIM,GLASS-GREEN     ME  D 073184 123199 N        1.000 EA
059 860-0643          SHIM,GLASS-TAN       ME  D 073184 123199 N        1.000 EA
060 860-0644          SHIM,GLASS-BLUE      ME  D 073184 123199 N        1.000 EA
EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                        **

¬BMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1146
 XPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                  E
ITM COMPONENT         DESCRIPTION          MOD TYP FROM   THRU  Q QTY PER ASSY UOM X
061 860-0645          SHIM,GLASS-BROWN     ME  D 073184 123199 N        2.000 EA
062 830-0092          PIN,GLS SCL,ALIGNM   ME  D 073184 123199 N        2.000 EA
063 677-9102          ASSY,PCB,T&BI,MTR    ME  D 101084 123199 N        1.000 EA  Y
064 406-1204          SCR 2-56X1/4 PN CR   ME  D 112684 123199 N        2.000 EA

EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                 **
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```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1149
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-5013                    EFF: DATE         SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                  E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
001 677-5014         INACTIVE,SUBASSY,U ME  D 090183 060784 N        0.000 EA  Y
002 677-5015         INACTIVE,SUBASSY,L ME  D 090183 060784 N        0.000 EA  Y
003 677-5009         SUBASSY,POSTION SE ME  D 090183 123199 N        0.000 EA  Y
004 409-6406         SCREW, 4-40 x 3/8  ME  D 090183 123199 N        2.000 EA
005 409-6206         SCREW, 2-56 x 3/8  ME  D 090183 123199 N        2.000 EA
006 677-5012         INACTIVE,FLXCBL SU ME  D 090183 060784 N        0.000 EA  Y
007 800-5024         CLIP,CABLE,WIDGET  ME  D 090183 123199 N        1.000 EA
008 409-6610         SCR 6-32X5/8 HEX S ME  D 090183 123199 N        1.000 EA
009 800-0121         ARM-LOWER,MACHINE, ME  D 013184 123199 N        1.000 EA
010 800-0120         ARM-UPPER,MACHINE, ME  D 013184 123199 N        1.000 EA
011 590-0168         FLEXCABLE,DATA,WID ME  D 013184 123199 N        1.000 EA
012 699-5001         LOWER HD SUSPENSIO ME  D 013184 123199 N        1.000 EA
EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
^C700011 MORE                        **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1149
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-5013                    EFF: DATE         SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                  E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
013 699-5000         UPPER HD SUSPENSIO ME  D 013184 123199 N        1.000 EA
014 515-0071         CONN,HDR,PLUG,DIP, ME  D 013184 123199 N        1.000 EA
015 677-5010         SUBASSY,LED,WIDGET ME  D 013184 123199 N        1.000 EA  Y
016 677-5011         SUBASSY,SENSOR,WID ME  D 013184 123199 N        1.000 EA  Y
017 699-5019         HEAD SUSPENSION AS ME  D 040484 123199 N        0.000 EA
018 699-5020         HEAD SUSPENSION AS ME  D 040484 123199 N        0.000 EA
019 800-5030         COUNTERWEIGHT,ARM, ME  D 060884 112584 N        1.000 EA
020 400-1406         SCR 4-40X3/8 PN HD ME  D 060884 112584 N        1.000 EA
021 907-0022         ADHESIVE,SEALANT,T ME  D 060884 112584 N        0.000 EA
022 907-0013         CEMENT             ME  D 060884 112584 N        0.000 OZ


EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                 **
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ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1149
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-5013                      EFF: DATE         SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
001 677-5014          INACTIVE,SUBASSY,U ME  D 090183 060784 N        0.000 EA  Y
002 677-5015          INACTIVE,SUBASSY,L ME  D 090183 060784 N        0.000 EA  Y
003 677-5009          SUBASSY,POSTION SE ME  D 090183 123199 N        0.000 EA  Y
004 409-6406          SCREW, 4-40 x 3/8  ME  D 090183 123199 N        2.000 EA
005 409-6206          SCREW, 2-56 x 3/8  ME  D 090183 123199 N        2.000 EA
006 677-5012          INACTIVE,FLXCBL SU ME  D 090183 060784 N        0.000 EA  Y
007 800-5024          CLIP,CABLE,WIDGET  ME  D 090183 123199 N        1.000 EA
008 409-6610          SCR 6-32X5/8 HEX S ME  D 090183 123199 N        1.000 EA
009 800-0121          ARM-LOWER,MACHINE, ME  D 013184 123199 N        1.000 EA
010 800-0120          ARM-UPPER,MACHINE, ME  D 013184 123199 N        1.000 EA
011 590-0168          FLEXCABLE,DATA,WID ME  D 013184 123199 N        1.000 EA
012 699-5001          LOWER HD SUSPENSIO ME  D 013184 123199 N        1.000 EA
EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
C700011 MORE                          **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1149
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-5013                      EFF: DATE         SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
013 699-5000          UPPER HD SUSPENSIO ME  D 013184 123199 N        1.000 EA
014 515-0071          CONN,HDR,PLUG,DIP, ME  D 013184 123199 N        1.000 EA
015 677-5010          SUBASSY,LED,WIDGET ME  D 013184 123199 N        1.000 EA  Y
016 677-5011          SUBASSY,SENSOR,WID ME  D 013184 123199 N        1.000 EA  Y
017 699-5019          HEAD SUSPENSION AS ME  D 040484 123199 N        0.000 EA
018 699-5020          HEAD SUSPENSION AS ME  D 040484 123199 N        0.000 EA
019 800-5030          COUNTERWEIGHT,ARM, ME  D 060884 112584 N        1.000 EA
020 400-1406          SCR 4-40X3/8 PN HD ME  D 060884 112584 N        1.000 EA
021 907-0022          ADHESIVE,SEALANT,T ME  D 060884 112584 N        0.000 EA
022 907-0013          CEMENT             ME  D 060884 112584 N        0.000 OZ


EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                  **
```

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I ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1143
 EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STEP

 ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
 ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 001 677-5016         INACTIVE,SUBASSY,H ME  D 110183 050684 N         0.000 EA  Y
 002 699-5003         ASSY,TOP COVER,WID ME  D 110183 123199 N         1.000 EA
 003 875-0052         GASKET, CHASSIS, W ME  D 110183 123199 N         1.000 EA
 004 699-5005         ASSY.,DISK,WIDGET  ME  D 110183 123199 N         1.000 EA
 005 815-5029         PLUG, COVER, WIDGE ME  D 110183 123199 N         1.000 EA
 006 875-0008         BUMPER,O-RING,WIDG ME  D 110183 123199 N         2.000 EA
 007 875-0009         O-RING, CRASH STOP ME  D 110183 123199 N         2.000 EA
 008 815-5030         SCALE, METAL, WIDG ME  D 110183 112584 N         1.000 EA
 009 815-5031         CLAMP,DISK,WIDGET  ME  D 110183 123199 N         1.000 EA
 010 805-5020         CLAMP, METAL SCALE ME  D 110183 112584 N         2.000 EA
 011 400-1604         SCR 6-32X1/4 PN HD ME  D 110183 123199 N        17.000 EA
 012 406-1207         SCR 2-56X7/16 PN H ME  D 110183 112584 N         3.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  1144
 EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STEP

 ASSY 677-6000                      EFF: DATE          SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                    E
  TM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 013 406-1605         SCR 6-32X5/16 PN H ME  D 110183 123199 N         9.000 EA
 014 825-5021         LABEL, WARRANTY WA ME  D 110183 123199 N         1.000 EA
 015 860-0430         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 016 860-0431         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 017 860-0432         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 018 860-0433         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 019 860-0434         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 020 860-0435         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 021 860-0436         SHIM,PLASTIC SCALE ME  D 110183 112584 N         1.000 EA
 022 918-0104         TORQUE SEAL, BLUE, ME  D 110183 123199 N         0.100 EA
 023 800-5027         CHASSIS, MACHINED, ME  D 013184 123199 N         1.000 EA
 024 805-5023         CLAMP, INDEX SENSO ME  D 013184 123199 N         1.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **
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I ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1       08/15/85  1143
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 677-6000                    EFF: DATE          SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                E
 ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 001 677-5016         INACTIVE,SUBASSY,H ME  D 110183 050684 N        0.000 EA   Y
 002 699-5003         ASSY,TOP COVER,WID ME  D 110183 123199 N        1.000 EA
 003 875-0052         GASKET, CHASSIS, W ME  D 110183 123199 N        1.000 EA
 004 699-5005         ASSY.,DISK,WIDGET  ME  D 110183 123199 N        1.000 EA
 005 815-5029         PLUG, COVER, WIDGE ME  D 110183 123199 N        1.000 EA
 006 875-0008         BUMPER,O-RING,WIDG ME  D 110183 123199 N        2.000 EA
 007 875-0009         O-RING, CRASH STOP ME  D 110183 123199 N        2.000 EA
 008 815-5030         SCALE, METAL, WIDG ME  D 110183 112584 N        1.000 EA
 009 815-5031         CLAMP,DISK,WIDGET  ME  D 110183 123199 N        1.000 EA
 010 805-5020         CLAMP, METAL SCALE ME  D 110183 112584 N        2.000 EA
 011 400-1604         SCR 6-32X1/4 PN HD ME  D 110183 123199 N       17.000 EA
 012 406-1207         SCR 2-56X7/16 PN H ME  D 110183 112584 N        3.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                        **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1       08/15/85  1144
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

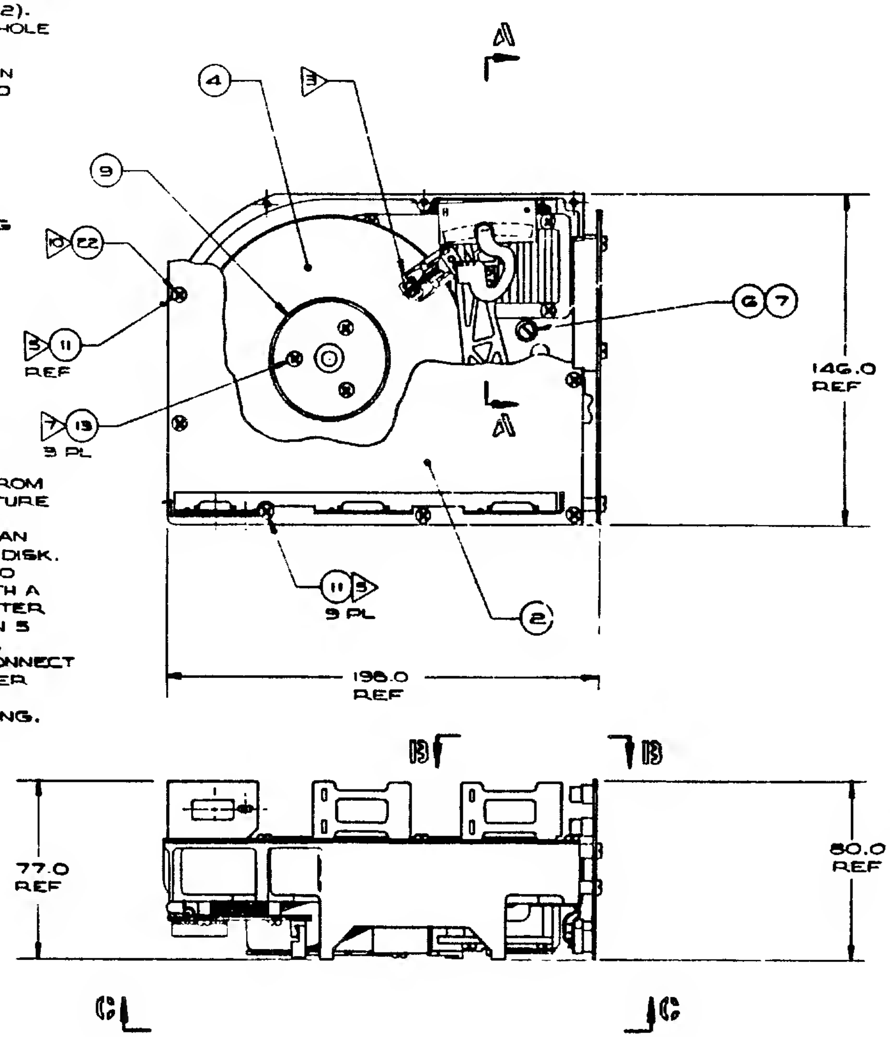
 ASSY 677-6000                    EFF: DATE          SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                E
 ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 013 406-1605         SCR 6-32X5/16 PN H ME  D 110183 123199 N        9.000 EA
 014 825-5021         LABEL, WARRANTY WA ME  D 110183 123199 N        1.000 EA
 015 860-0430         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 016 860-0431         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 017 860-0432         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 018 860-0433         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 019 860-0434         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 020 860-0435         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 021 860-0436         SHIM,PLASTIC SCALE ME  D 110183 112584 N        1.000 EA
 022 918-0104         TORQUE SEAL, BLUE, ME  D 110183 123199 N        0.100 EA
 023 800-5027         CHASSIS, MACHINED, ME  D 013184 123199 N        1.000 EA
 024 805-5023         CLAMP, INDEX SENSO ME  D 013184 123199 N        1.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                        **
```

NOTE: UNLESS OTHERWISE SPECIFIED

1. PRIOR TO ASSEMBLY, REMOVE COVERING FROM GASKET (ITEM 3) TO EXPOSE ADHESIVE AND PRESS ONTO UNDERSIDE OF COVER (ITEM 2). CARE MUST BE TAKEN TO ENSURE THAT HOLE PATTERNS LINE UP.
2. INSTALL PLUG (ITEM 5) IN COVER (ITEM 2) IN LOCATION SHOWN. PLUG MUST NOT EXTEND BEYOND TOP SURFACE OF COVER.
3. TO LOAD HEADS ONTO DISK (ITEM 4) SLIDE HEAD LOADING TOOL BETWEEN UPPER AND LOWER ARMS TO GENTLY FORCE HEADS APART. ROTATE ARM ASSY UNTIL HEADS ARE OVER DISK AND CAREFULLY REMOVE HEAD LOADING TOOL. HEADS ARE NOW PROPERLY POSITIONED ON DISK.
5. TORQUE SCREWS (ITEM 11) TO 10.0 IN/LBS.
7. TORQUE SCREWS (ITEM 13) TO 5.0 IN/LBS.
8. PARTICLE COUNT PROCEDURE:
   AFTER ASSY, REMOVE PLUG (ITEM 5) FROM COVER AND INSERT AIR SAMPLING FIXTURE FROM PARTICLE COUNTER INTO HOLE. CONNECT SPINDLE MOTOR HARNESS TO AN EXTERNAL POWER SUPPLY TO ROTATE DISK. PARTICLE COUNT READING SHOULD BE 50 PARTICLES PER CUBIC FT OR LESS WITH A MAX PARTICLE SIZE OF .3 MICRONS AFTER RUNNING THE UNIT FOR NO MORE THAN 5 MINUTES. AFTER TEST IS COMPLETED, INSTALL PLUG PER NOTE 2 AND DISCONNECT SPINDLE MOTOR HARNESS FROM POWER SUPPLY. DO NOT MOVE CHASSIS UNTIL SPINDLE MOTOR HAS STOPPED ROTATING.
9. AFTER PARTICLE COUNT TESTING PER NOTE 8, POSITION LABEL (ITEM 14) OVER PLUG APPROXIMATELY AS SHOWN.
10. AFTER COVER IS IN PLACE AND ALL SCREWS (ITEM 11) ARE PROPERLY TORQUED PER NOTE 5, APPLY TORQUE SEAL (ITEM 22) TO SCREW HEAD TO PREVENT TAMPERING (ONE PLACE ONLY IN LOCATION SHOWN).

NOTES CONTINUED ON SHEET 3



REV	ZONE	ECO	DESCRIPTION
A		P020	INITIAL RELE… (SK-W175-0…
B		P780	ADDED SHEETS 3, 4 … ADDED ITEMS 33 THRU 49. SHEET 1 ADDED 201.2 REF & 82.2 REF. DELETED 190.0 REF.
C	2A 3A 3B 3B 3B 3D 4A 3B	P7…	SHT 1 REMOVED PICTURE OF S/N LABEL. REVISED PICTURE OF PCB RETAINER. ADDED PICTURE OF LATEST PCB RETAINER. SHT 3 ITEM 24 UPDATED. SHT 4 - ITEM 50 WAS ITEM 11. ADDED VIEW H-H. REMOVED ITEM 41. DELETED NOTE 29. CHANGED NOTE 30. SHT 5: REMOVED ITEM 55 INDICATOR. UPDATE PICTURE OF COUNTERWEIGHT. UPDATE PICTURE OF FLEX-CABLE. REMOVE NOTE 29 CALLOUT
D	3B 2A 1C 2C	P810	SHT 1 DIM 196.0 REF WAS 201.2 REF. DIM 80.0 REF WAS 82.2 REF. SHT 3 - DELETED NOTES 17, 19 & 20. REMOVED ITEM 45 & 46 CALLOUTS. SHT 4 ITEM 51 WAS ITEM 38. ADDED ITEMS 62 THRU 68. ADDED SHT 6 OF 6.
D	3C	P8…	RECORD CHANGE ONLY. SHT 3: ADDED ITM 68 CALLOUT AND 'ALTN' TO ITM 33 CALLOUT.
E	2D 5A C&D 3C 2A 2B 8C 2D	P8…	SHT 1 DELETED ITEMS 8, 10 & 12. DELETED NOTES 4 & 6. SHT 2: DELETED SECTION A-A (INCLUDED ITEMS 8, 10, 12, 15 TO 19, 20 & 21). SHT 3: ADDED CALLOUT ITEM 44. CALLOUT 44 WAS 40. ADDED CALLOUT ITEM 42. SHT 4. CHANGED NOTE 26. SHT 5: DELETED ITEM 28. DELETED SECTION F-F. SHT 6. DELETED NOTATION 'ALTERNATE CONFIGURATION APPLIES ONLY TO ITEMS 53-62 (GLASS SCALE ASSY)'.

SEE SHT 4 & 5 FOR HDA SUBASSY

SEE SEPARATE BILL OF MATL, 677-6000

METRIC

apple computer inc.

ASSY, HEAD/DISK WIDGET

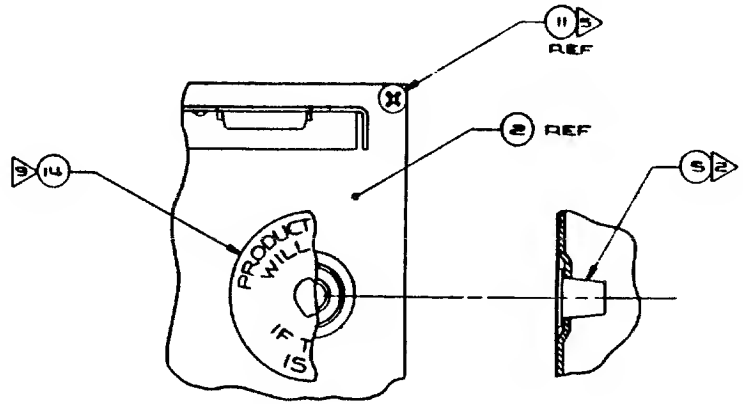
M.B.D.

FULL

B G77-G000-E 1/6

NOTE: UNLESS OTHERWISE SPECIFIED

			SEE SHEET 1



VIEW B-B
SCALE : 2X

	METRIC	apple computer inc.
		ASSY, HEAD/DISK WIDGET
	M.S.D.	B G77-0000-E 2/6

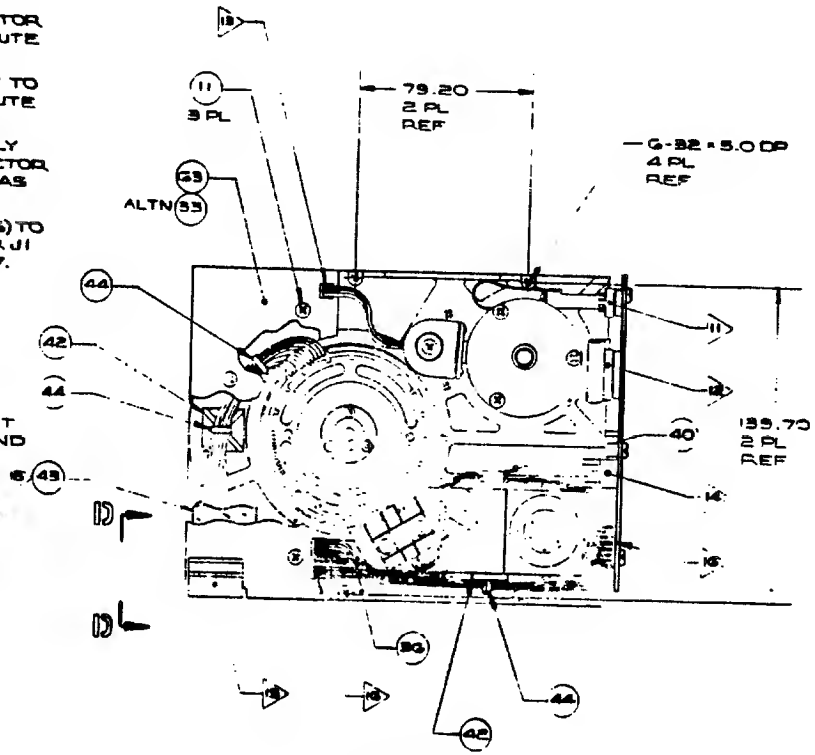
G77-0000-E 2/6

NOTE: UNLESS OTHERWISE SPECIFIED

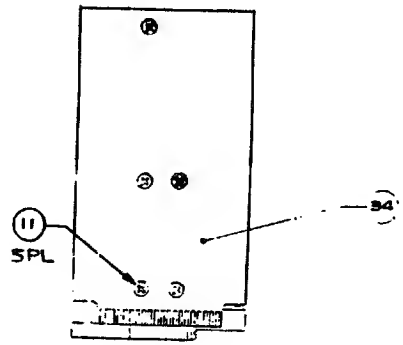
NOTES CONTINUED FROM SHEET 1

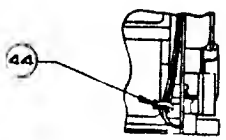
11. CONNECT ACTUATOR MOTOR CABLE TO MOTHER BOARD, CONNECTOR J4. ROUTE CABLE APPROXIMATELY AS SHOWN.
12. CONNECT ARM ASSEMBLY CABLE TO MOTHER BOARD, CONNECTOR J5. ROUTE CABLE APPROXIMATELY AS SHOWN.
13. CONNECT BRAKE ASSEMBLY TO MOTOR CONTROL BOARD, CONNECTOR J3. ROUTE WIRES APPROXIMATELY AS SHOWN.
14. CONNECT INDEX SENSOR ASSEMBLY TO MOTHER BOARD, CONNECTOR J6. ROUTE WIRES APPROXIMATELY AS SHOWN.
15. CONNECT SPINDLE MOTOR ASSEMBLY TO MOTOR CONTROL BOARD, CONNECTOR J2. ROUTE WIRES APPROXIMATELY AS SHOWN.
16. CONNECT CABLE ASSEMBLY (ITEM 36) TO MOTOR CONTROL BOARD, CONNECTOR J1 AND MOTHER BOARD, CONNECTOR J7. ROUTE WIRES APPROXIMATELY AS SHOWN.
18. PRIOR TO ASSEMBLY, POSITION INSULATOR (ITEM 45) BETWEEN CIRCUIT SIDE OF MOTOR CONTROL BOARD AND CHASSIS AS SHOWN.

NOTES CONTINUED ON SHEET 4



VIEW C-C





VIEW D-D

			SEE SHEET

	METRIC	apple computer inc.
		ASSY, HEAD/DISK WIDGET
		B 677-6000-E 5/6

677-6000-E 5/6

NOTE: UNLESS OTHERWISE SPECIFIED NOTES CONTINUED FROM SHEET 3

21. ALIGN ARM ASSY (ITEM 37) TO ACTUATOR MOTOR ASSY (ITEM 30) BY FOLLOWING THE PROCEDURES LISTED BELOW:
   A. ROTATE ARM ASSY CLOCKWISE (LOOKING AT VIEW E-E) UNTIL LOWER ARM CONTACTS 7.0 DIA BOSS ON CHASSIS.
   B. ROTATE ACTUATOR SHAFT CLOCKWISE (LOOKING AT VIEW E-E) AS FAR AS POSSIBLE.
   C. TIGHTEN G-32 SCREW ON ARM TO 15.0±1.0 IN/LBS.

22. PRIOR TO ASSEMBLY, REMOVE COVERING TO EXPOSE ADHESIVE ON FLEXCABLES (SEE ITEMS 30 AND 37) IN LOCATIONS SHOWN. FLEXCABLES TO BE ROUTED APPROXIMATELY AS SHOWN.

24. POSITION LABEL (ITEM 41) APPROXIMATELY AS SHOWN.

25. APPLY LOCTITE (ITEM 49) TO SCREW THREADS (ITEM 48) PRIOR TO ASSEMBLY. TORQUE SCREW TO 7.0 IN./LBS.

26. POSITION BRAKE ASSY (ITEM 29) SO THAT BRAKE HOUSING CENTER LINE IS RADIAL TO ACTUATOR SHAFT. AIR GAP BETWEEN NEOPRENE PAD ON BRAKE AND ACTUATOR BRAKE PAD TO BE .350 (.013 IN.) WHEN BRAKE IS ENERGIZED.

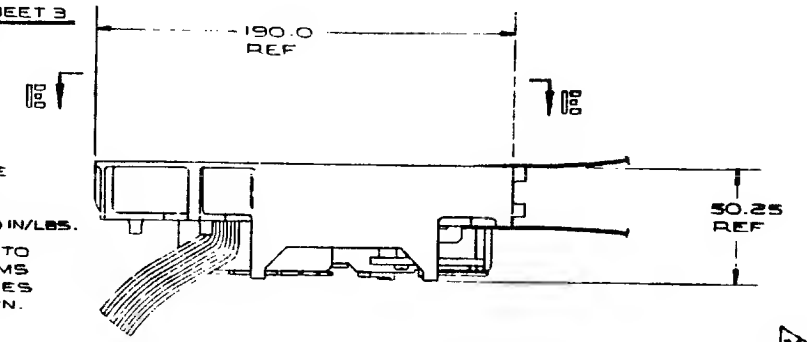
27. POSITION INDEX SENSOR ASSY (ITEM 24) SO THAT SENSOR HOUSING CENTER LINE IS RADIAL TO SPINDLE MOTOR SHAFT. AIR GAP BETWEEN SENSOR TIP AND SECTOR DISK TO BE .381 (.015 IN).

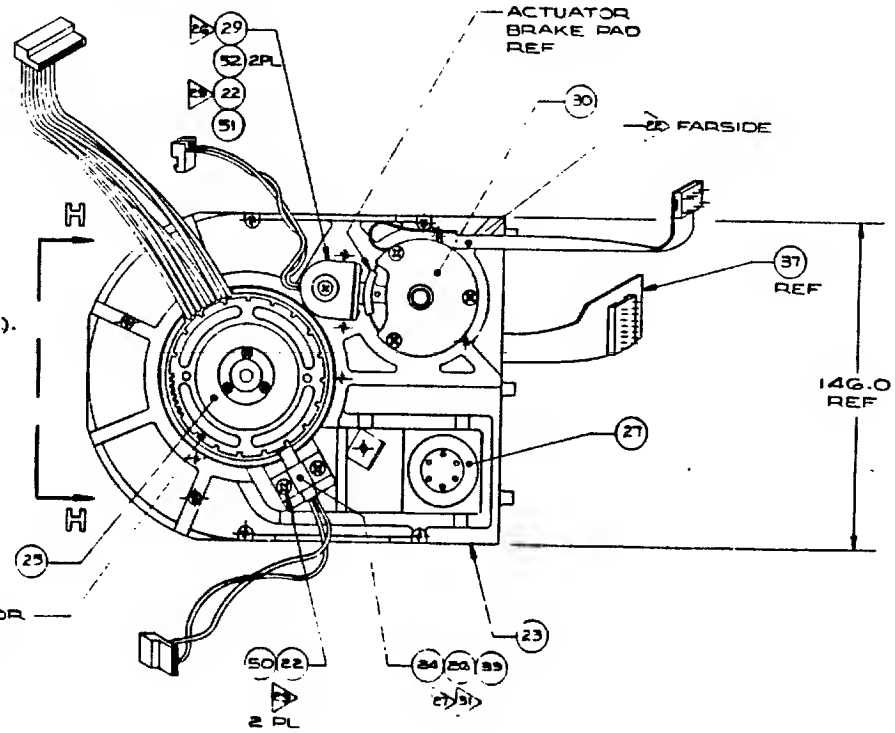
28. UNLESS OTHERWISE SPECIFIED, TORQUE ALL SCREWS TO 10.0 IN/LBS.

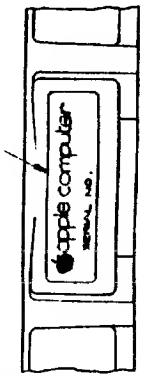
29. AFTER BRAKE AND INDEX SENSOR ARE PROPERLY POSITIONED ON CHASSIS PER NOTES 26 & 27 AND SCREWS (ITEMS 50 & 38) ARE TORQUED IN PLACE, APPLY TORQUE SEAL (ITEM 32) TO SCREW HEADS TO PREVENT TAMPERING.

30. AFTER INSTALLATION OF INDEX SENSOR PER NOTE 27, APPLY LOCTITE (ITEM 39) BETWEEN CLAMP AND SENSOR TO PREVENT SENSOR FROM MOVING.

NOTES CONTINUED ON SHEET 6





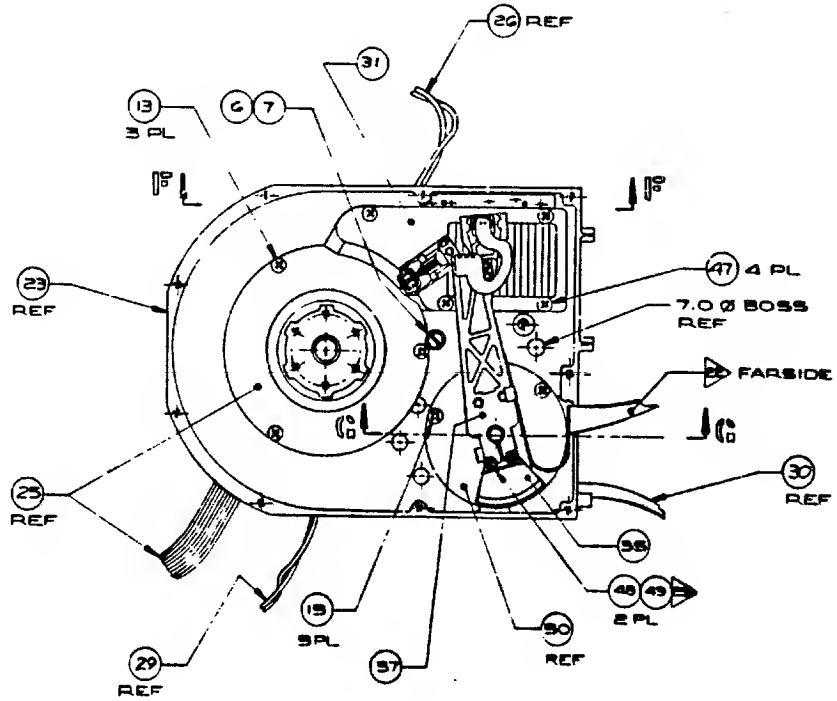


VIEW H - H
SCALE: 2X

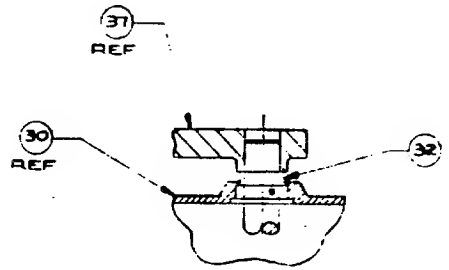
HDA SUBASSY

C	METRIC	apple computer inc.
		ASSY, HEAD / DISK WIDGET
	FULL	G77-[illegible]-E

NOTE: UNLESS OTHERWISE SPECIFIED



21 VIEW F-F
SCALE : FULL



SECTION C-C
SCALE : 2X

HDA SUBASSY

METRIC	apple computer inc.	
	ASSY, HEAD/DISK WIDGET	
NOTED	B	G77-6000-E

G77-6000-E 3/6

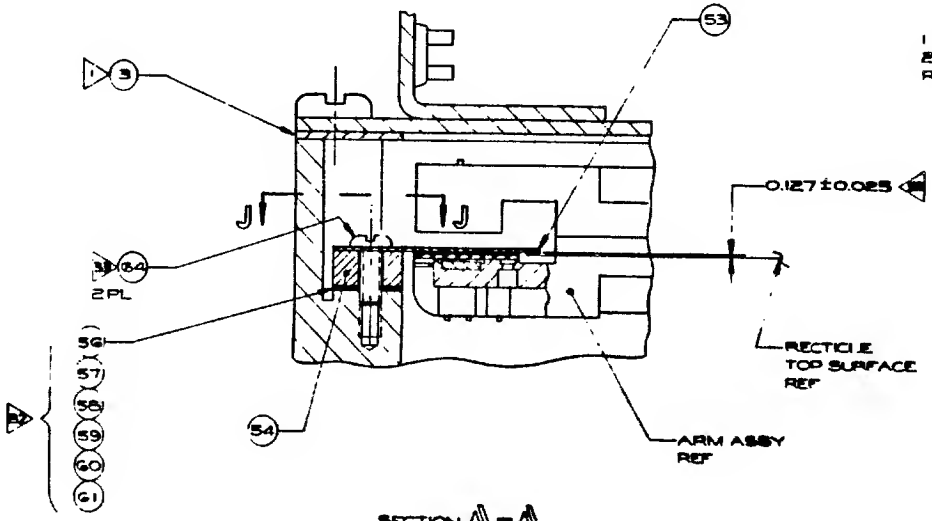
NOTE: UNLESS OTHERWISE SPECIFIED

(32) INSTALL SHIMS (ITEMS 56 THRU 61) AS REQUIRED IN LOCATION SHOWN TO ACHIEVE THE INDICATED GAP BETWEEN BOTTOM SURFACE OF SCALE (ITEM 53) AND TOP SURFACE OF RECTICLE.

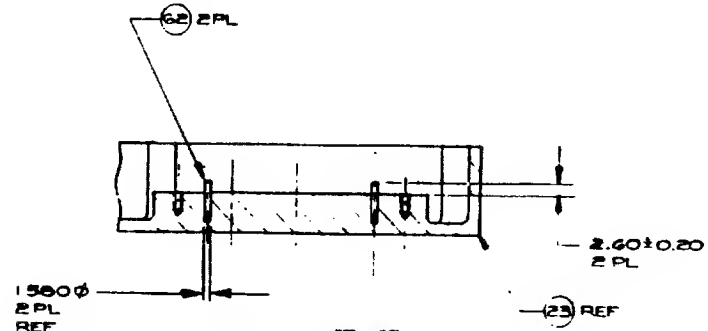
(33) TORQUE SCREWS (ITEM 64) TO 3.0 IN/LBS

(31) PRESS FIT ALIGNMENT PINS (ITEM 62) INTO 1.580 DIA HOLES IN CHASSIS (ITEM 23) TO INDICATED DIMENSION.

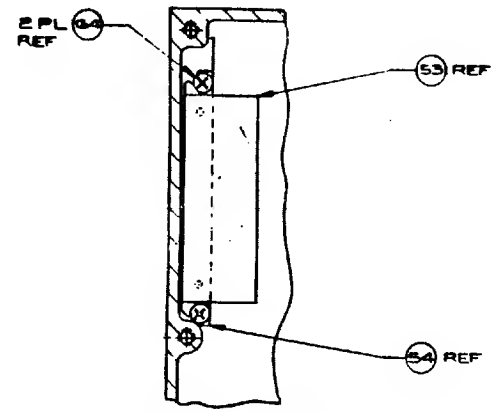
SEE SHEET



SECTION A-A
ROTATED 90° CCW
SCALE: 5X



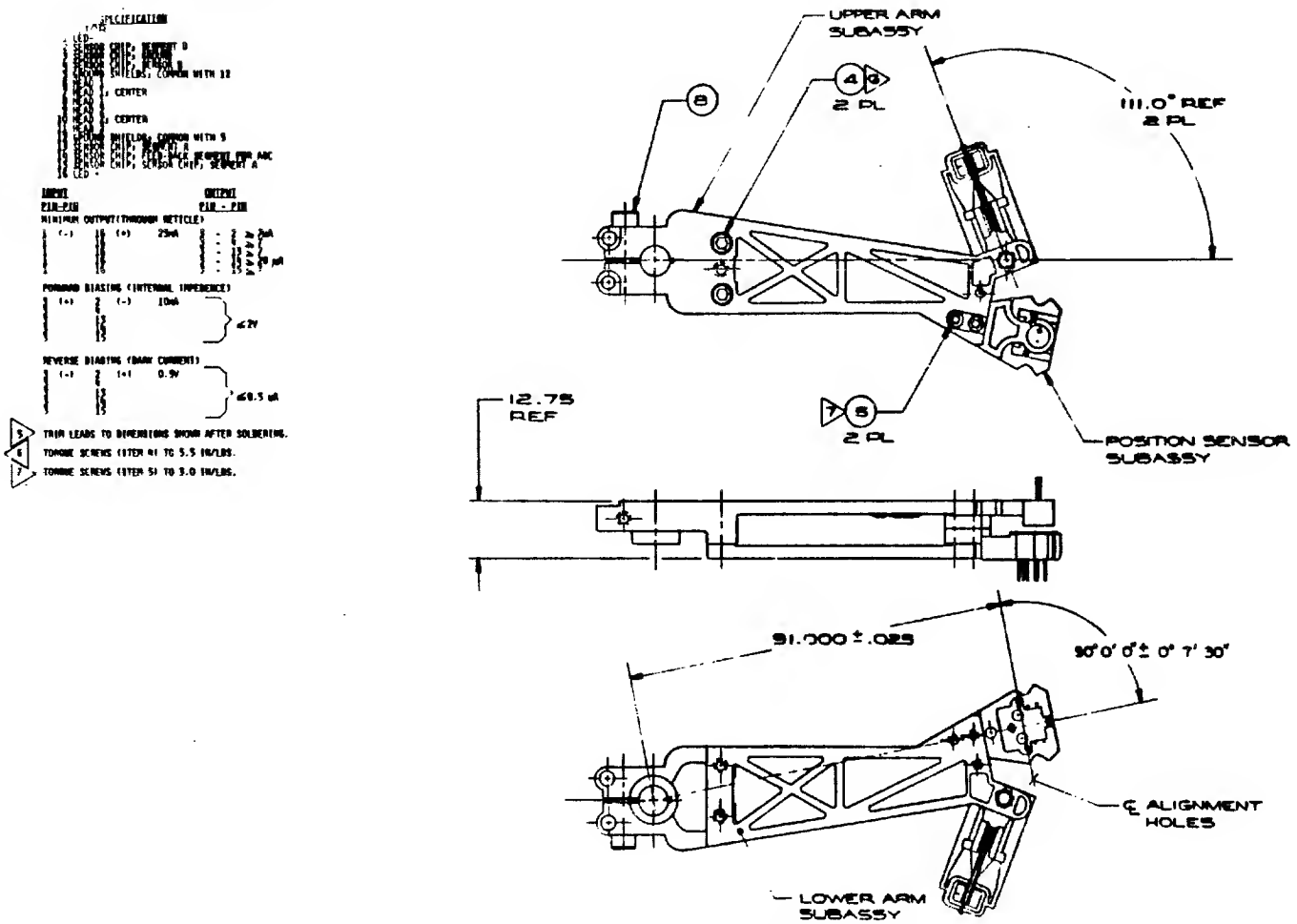
SECTION F-F
SCALE: 2X



SECTION J-J
SCALE: 2X

	METRIC	apple computer inc.	
		ASSY, HEAD/DISK WIDGET	
	NOTED	G77-6000-E	6/6

G77-6000-E 6/6



1 FLEXCABLE OMITTED FOR CLARITY

SUBASSYS ARE DETAILED AS FOLLOWS:
SHT 3: UPPER ARM
SHT 4: LOWER ARM
SHT 5: POSITION SENSOR
SHT 6: FLEXCABLE

SEE SEPARATE BILL OF MATERIAL: 677-5013

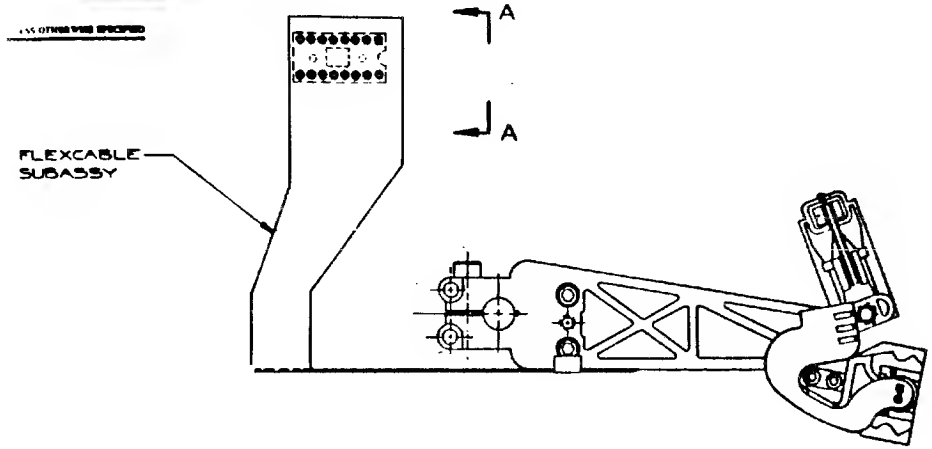
METRIC

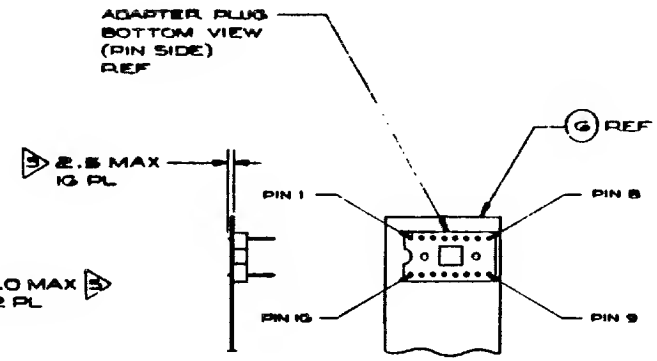
apple computer inc.

SUBASSY, ARM, WIDGET

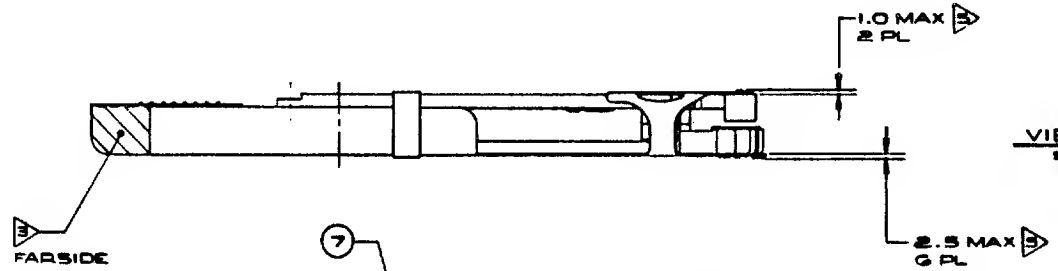
2x | D | 677-5013-D | 1/6

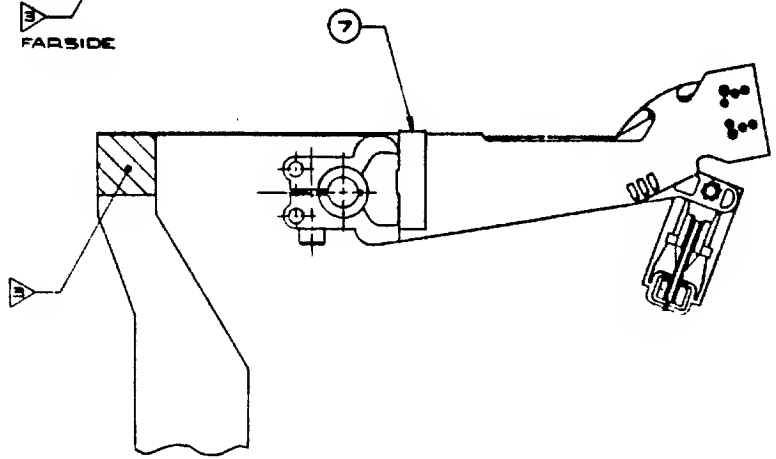
677-5013-D 1/6





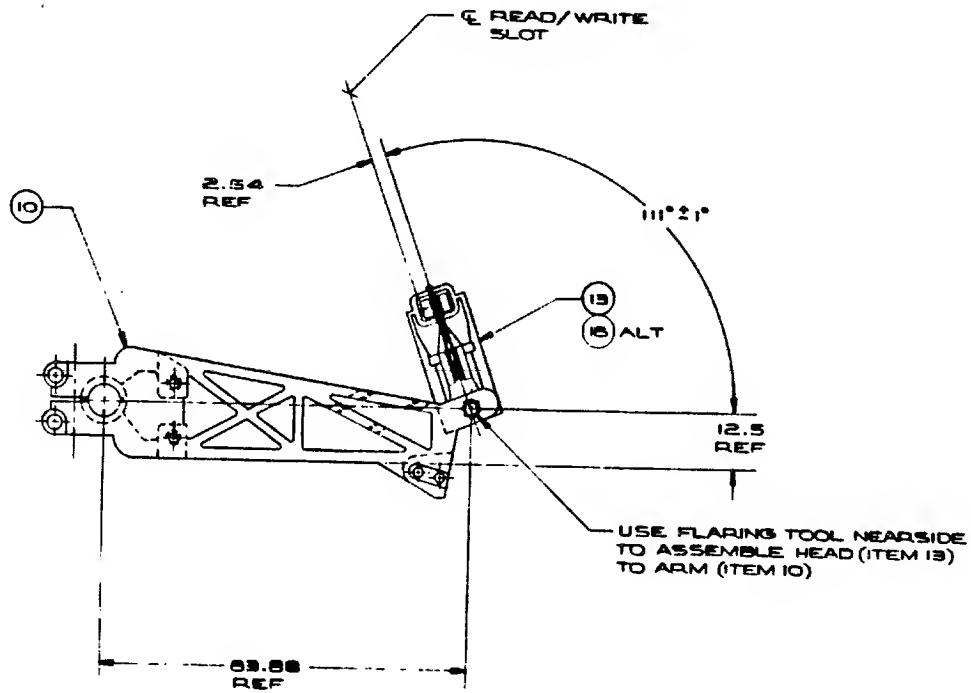
VIEW A-A
SCALE: 2X





	METRIC	apple computer inc.	
		SUBASSY, ARM, WIDGET	
	M.S.O.		
	2X	D	2/2

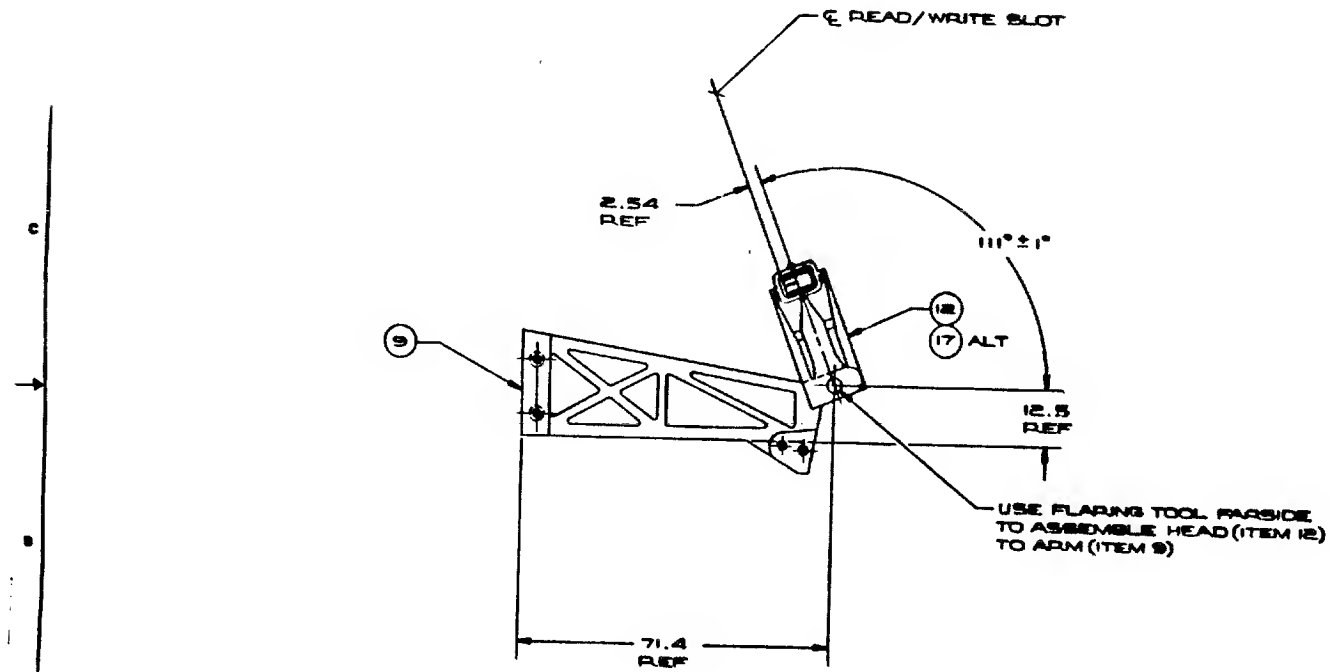
677-5013-D



UPPER ARM SUBASSY

	METRIC	apple computer inc.	
	M S.S.	SUBASSY, ARM WIDGET	
	2X	B 677-5013-D	3/6

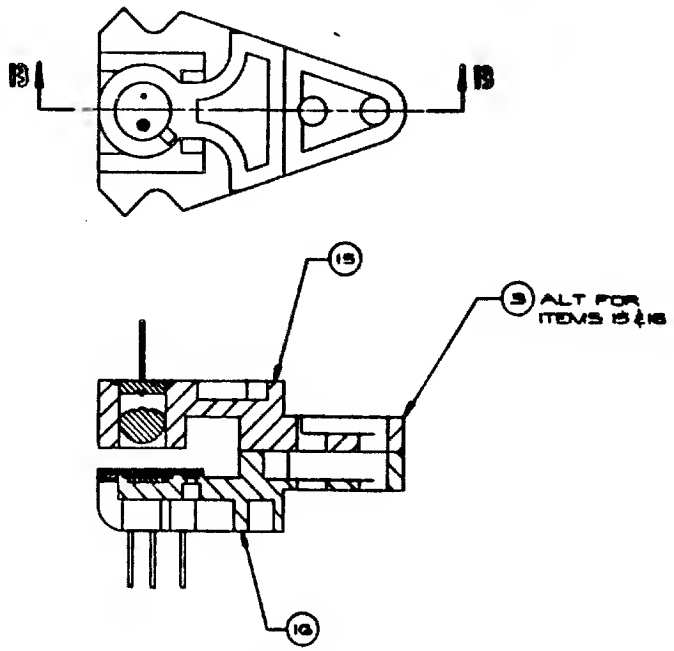
677-5013-D 3/6



LOWER ARM SUBASSY

METRIC	apple computer inc.	
M.S.G.	SUBASSY, ARM WIDGET	
2X	B G77-5013-D	4/6

G77-5013-D 4/6

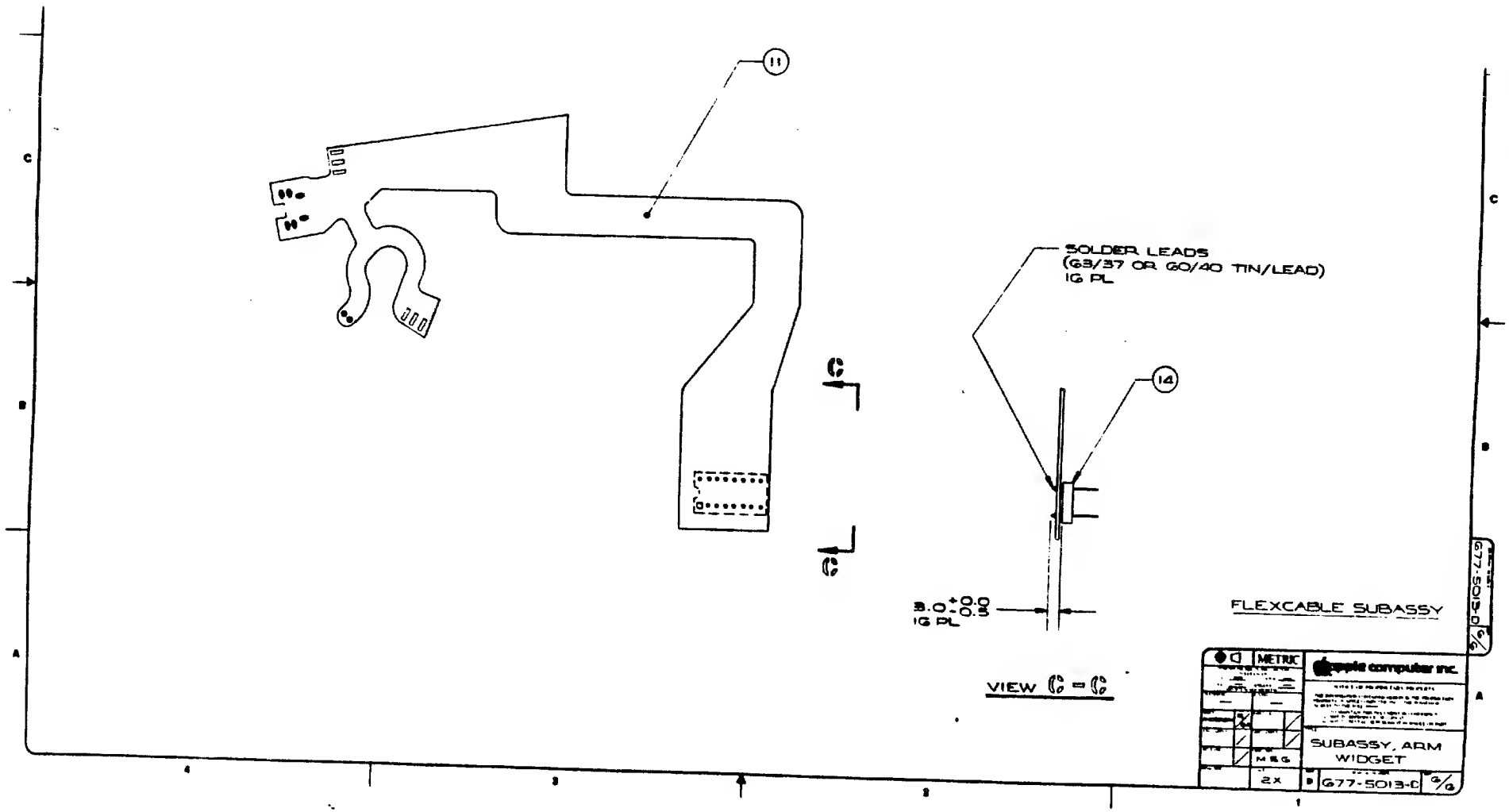


SECTION B - B

POSITION SENSOR SUBASSY

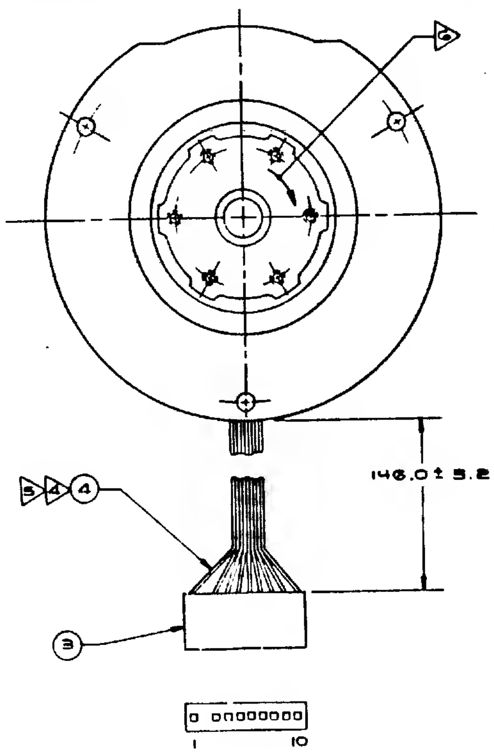
	METRIC	apple computer inc.
		SUBASSY, ARM WIDGET
		B 677-5019-D 3/4

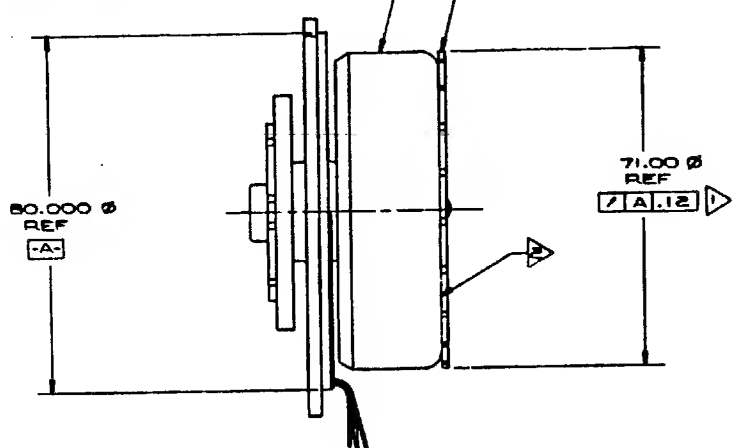
677-5019-D 3/4


11
SOLDER LEADS
(63/37 OR 60/40 TIN/LEAD)
16 PL
14
C
C
3.0 +0.0 -0.5
16 PL
VIEW C = C
FLEXCABLE SUBASSY
METRIC
apple computer inc.
SUBASSY, ARM
WIDGET
M 8 G
2X
B
G77-5013-C
G77-5013-D
%
%

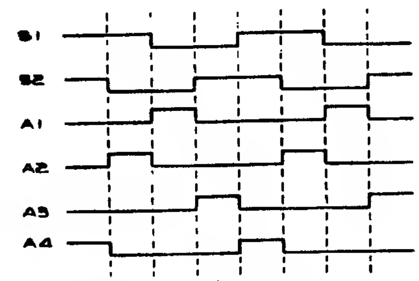
NOTE: UNLESS OTHERWISE SPECIFIED

1. ORIENTATION OF SECTOR DISK (ITEM 2) TO SPINDLE MOTOR (ITEM 1) IS OPTIONAL EXCEPT AS NOTED.
2. METHOD OF ATTACHING SECTOR DISK (ITEM 2) TO SPINDLE MOTOR (ITEM 1) IS OPTIONAL. DISK MUST BE REMOVABLE AFTER ASSY.
3. SPECIFICATIONS:
   A. NO LOAD RUNNING CURRENT AT 3200 RPM = 180 MA TYPICAL (200 MA MAX).
   B. 2 PLANE MAX UNBALANCE = 2.5 GM-MM.
   C. RUNOUT:
      REPEATABLE = LESS THAN 400 μ IN.
      NON-REPEATABLE = LESS THAN 50 μ IN.
   D. SPEED = 3200 RPM.
   E. STARTING CURRENT = NO MORE THAN 750 MA.
   F. STARTING TIME = LESS THAN 10 SEC.
4. SEE WIRING CHART FOR ROUTING REQUIREMENTS AND WIRE COLOR.
5. ORIENTATION OF WIRE BUNDLE TO SPINDLE MOTOR (ITEM 1) TO BE AS SHOWN.
6. DIRECTION OF ROTATION TO BE AS SHOWN.





WIRING CHART		
PIN NO.	COLOR	FUNCTION
1	GREEN	+12V
2	—	—
3	PURPLE	+5V
4	GRAY	S2
5	WHITE	S1
6	BLUE	GROUND
7	BROWN	A3
8	RED	A4
9	ORANGE	A2
10	YELLOW	A1



MOTOR TIMING DIAGRAM

SEE SHEET 1 FOR REVISIONS

QTY.	IT.	PART NO.	DESCRIPTION
1	1	SEE SHT. 2	MOTOR, SPINDLE
1	2	SEE SHT. 3	DISK, SECTOR
1	3		CONN., AMP 1-640441-0
A/R	4		WIRE, AWG 26, INSUL

METRIC

apple computer inc.

SPINDLE MOTOR ASSY – WIDGET

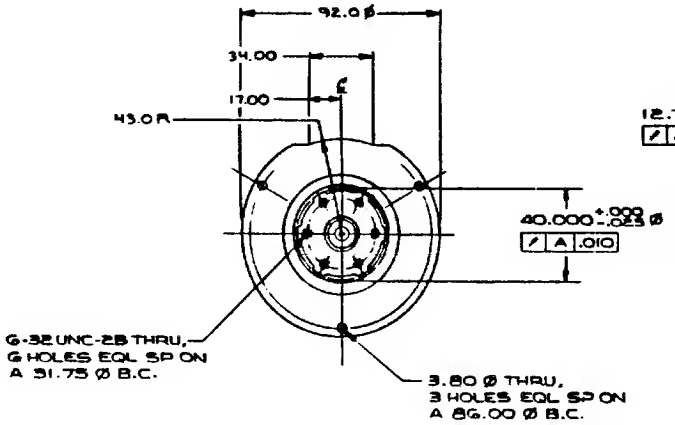
D 699-0207-B 2/4

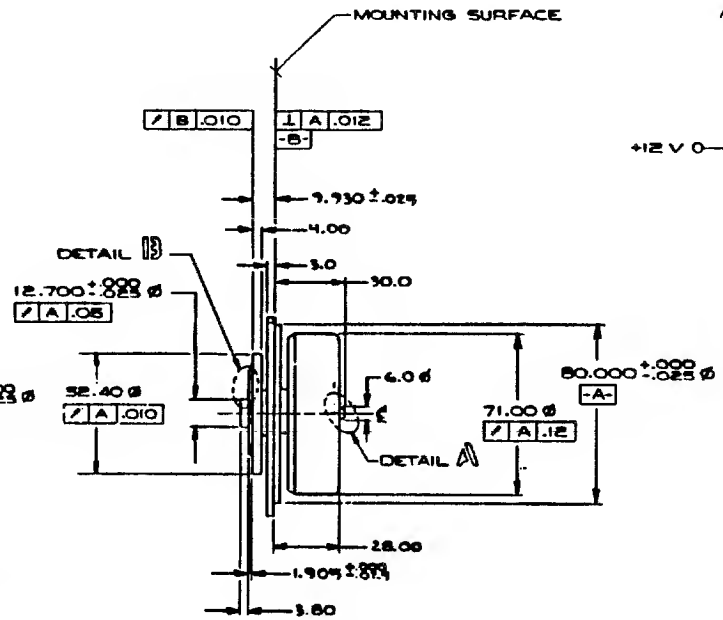
2X

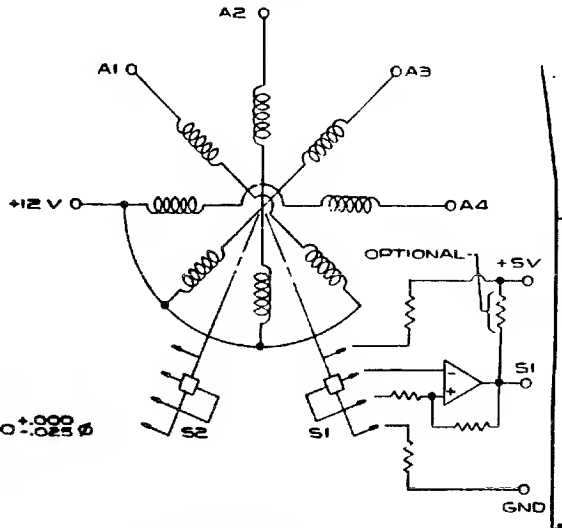
699-0207-B 2/4

NOTE: UNLESS OTHERWISE SPECIFIED

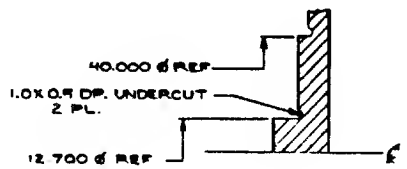
SEE SHEET 1 FOR REV



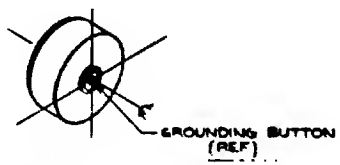




SCHEMATIC
VIEW FROM ROTOR END
SCALE: NONE



DETAIL B
SCALE: NONE



DETAIL A
SCALE: 1/2 X

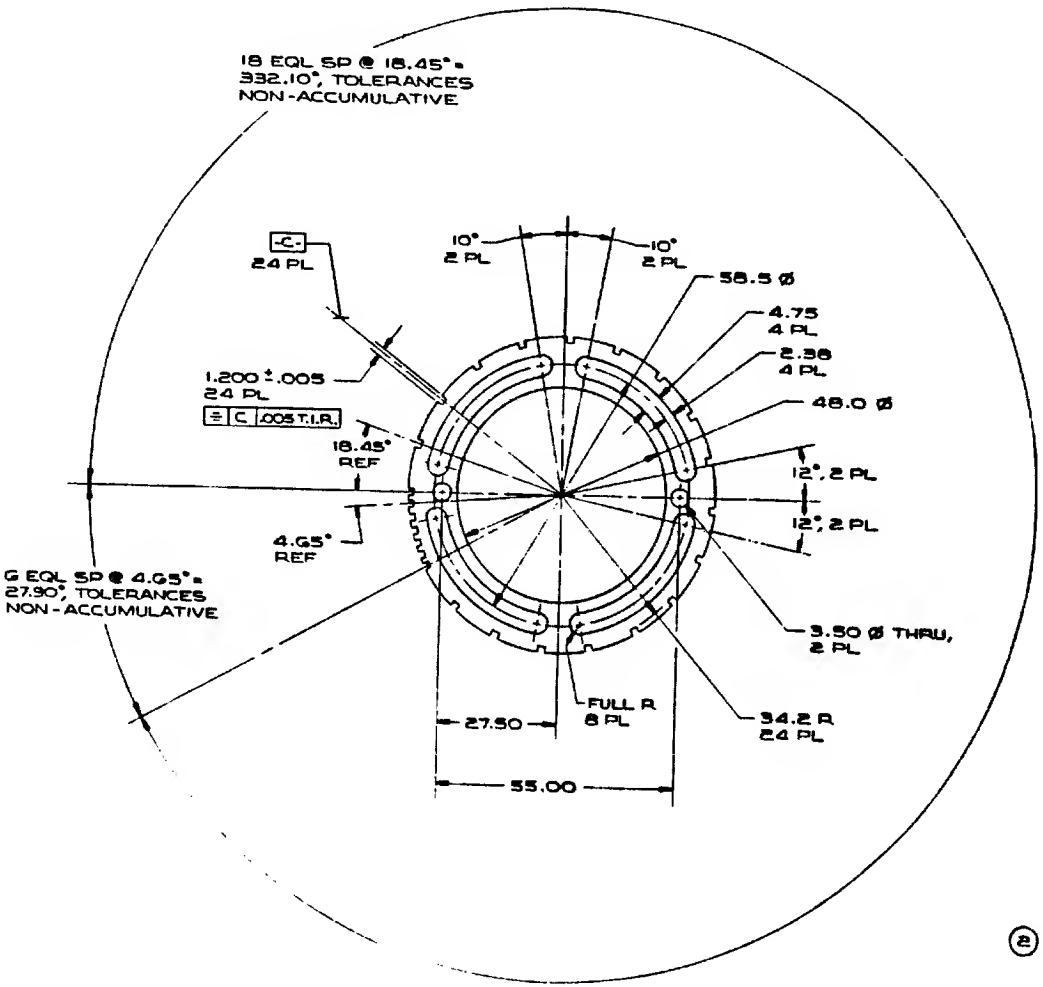
① MOTOR, SPINDLE

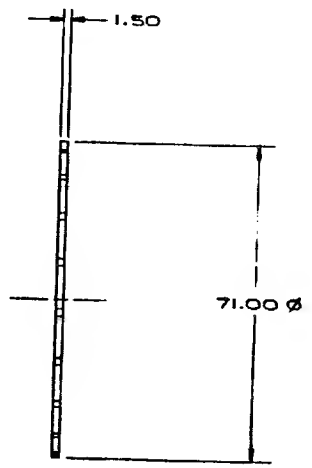
METRIC	apple computer inc.	
P.S.D.	SPINDLE MOTOR ASSY-WIDGET	
FULL	B 699-0207-B	3/4

699-0207-B 3/4

NOTE: UNLESS OTHERWISE SPECIFIED

SEE SHEET 1 FOR REVISIONS





② DISK, SECTOR

MATL: 16 GA STL, C1020
FINISH: CAD PL, .018 THK
(.0005 IN)

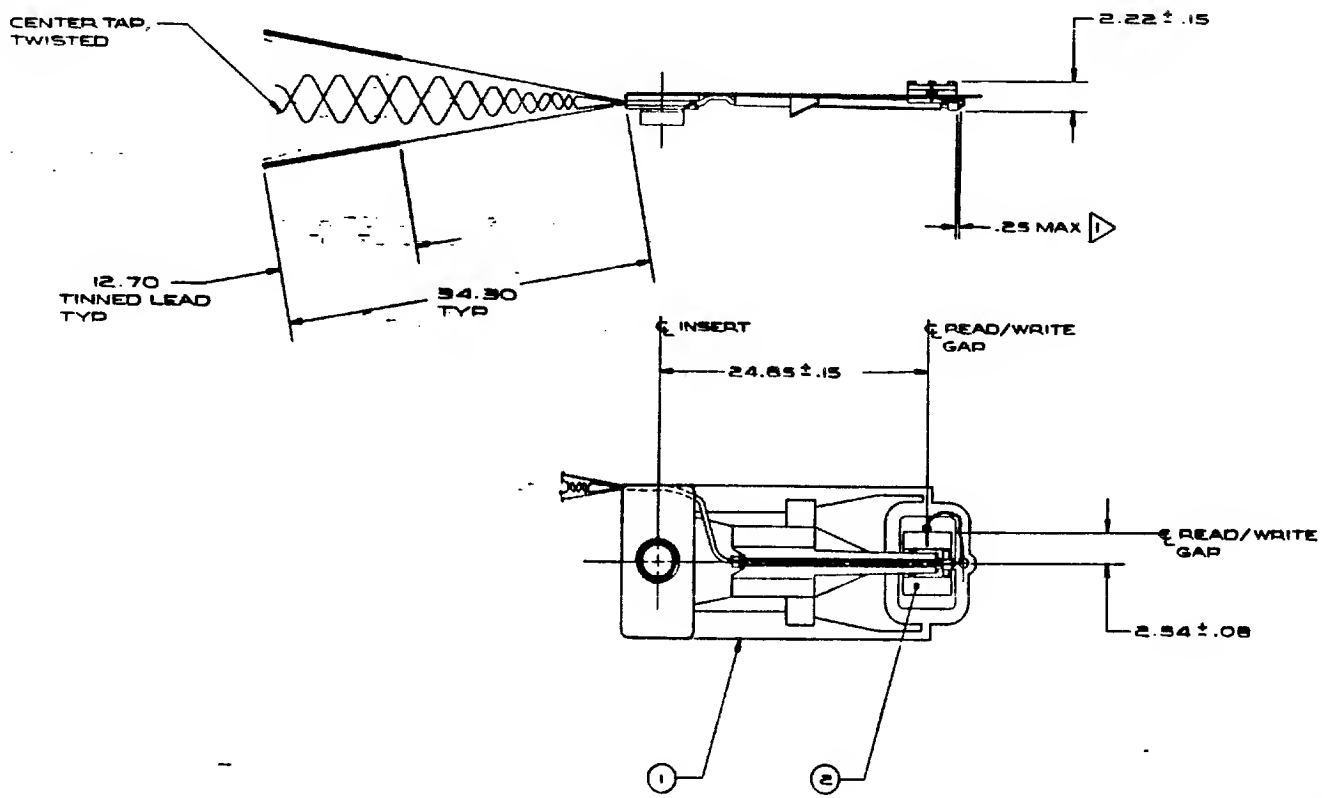
METRIC	apple computer inc.	
P&D	SPINDLE MOTOR ASSY - WIDGET	
2X	D 699-0207-B	4/4

699-0207-B 4/4

NOTE: UNLESS OTHERWISE SPECIFIED

1 INDICATED DIMENSION SPECIFIES LENGTH OF PVC TUBING THAT MAY EXTEND BEYOND LOAD FINGER.

REV	ZONE	ECO #	REVISION	APPD
			SEE SHEET 1 (WAS SK-W080-04)	



REF: ASSY, UPPER-HEAD SUSPENSION

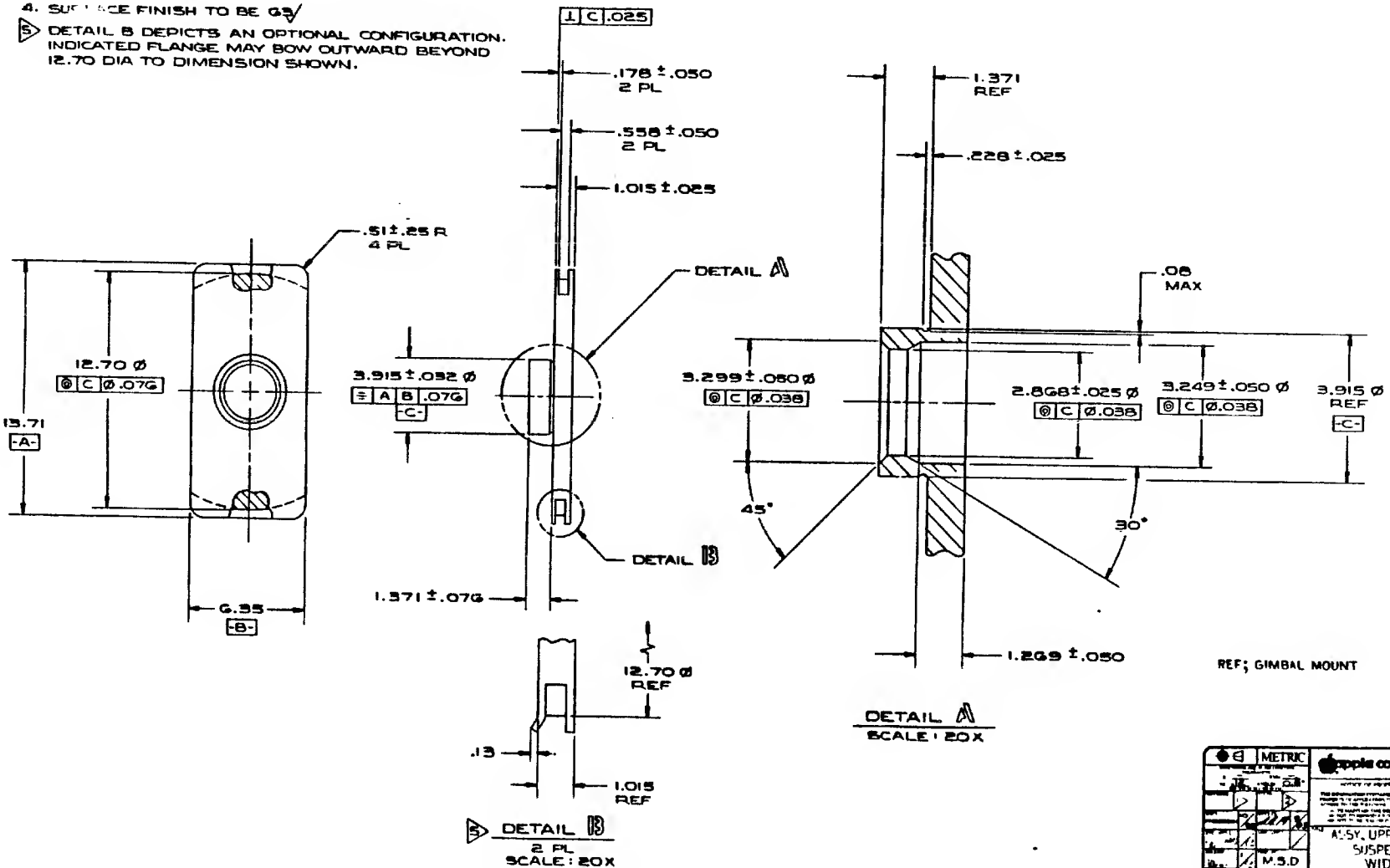
699-5000-A 1/8

	METRIC	apple computer inc.
	M S D	ASSY, UPPER-HEAD SUSPENSION, WIDGET
	SX	D 699-5000-A 1/8

NOTE: UNLESS OTHERWISE SPECIFIED

1. MATL: STAINLESS STEEL, 302/303.
2. FINISH: BRIGHT ANNEAL.
3. NO SHARP EDGES OR BURRS PERMITTED.
4. SURFACE FINISH TO BE 63
5. DETAIL B DEPICTS AN OPTIONAL CONFIGURATION. INDICATED FLANGE MAY BOW OUTWARD BEYOND 12.70 DIA TO DIMENSION SHOWN.

ZONE	REVISIONS
	SEE SHEET 1 (WAS SK WD36)

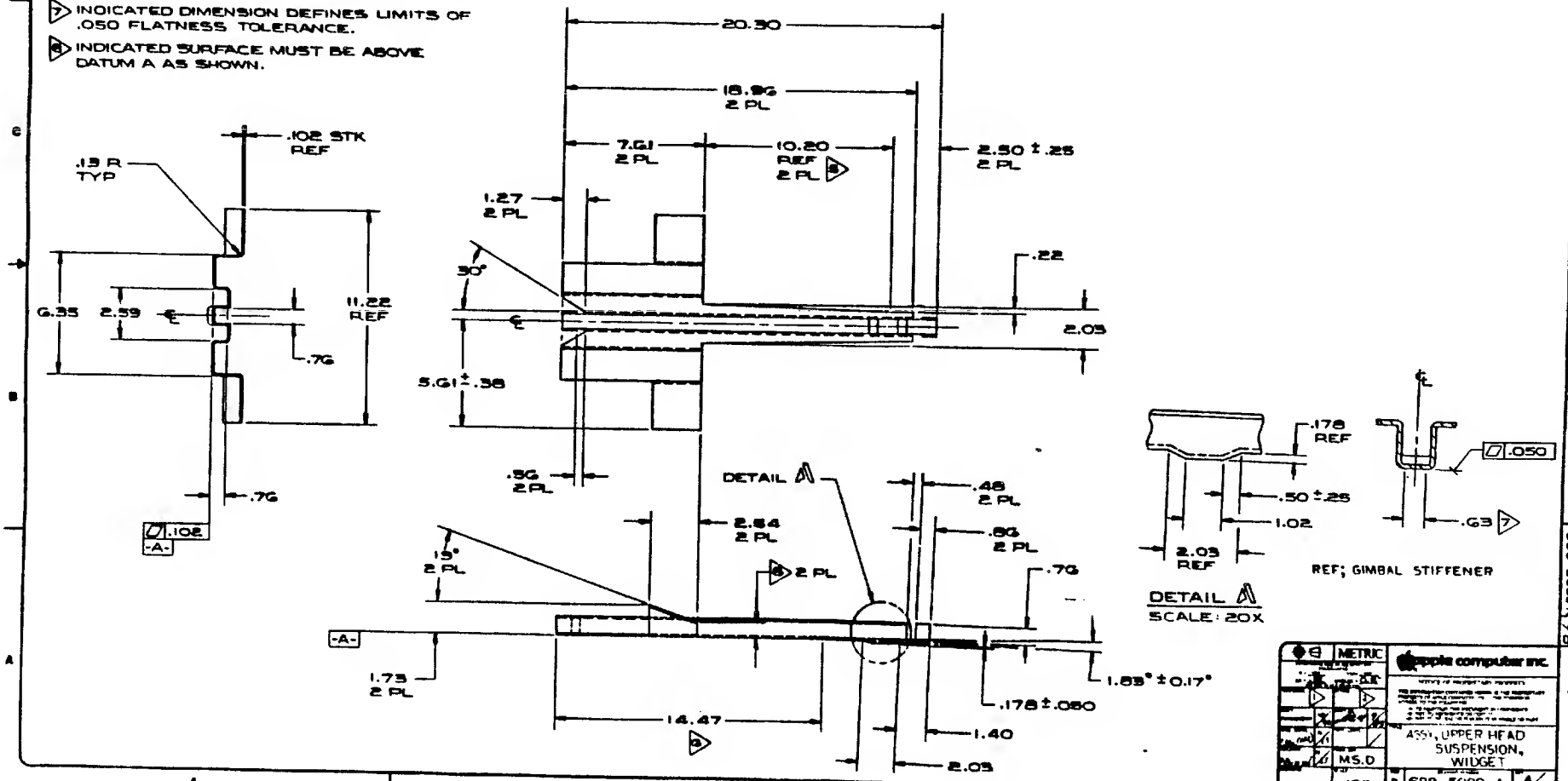


⊕ E	METRIC	apple computer inc.
M.S.D		ASSY, UPPER-HEAD SUSPENSION, WIDGET
10X	D	699-5000-A 3/8

NOTE: UNLESS OTHERWISE SPECIFIED

1. MATL: STAINLESS STEEL, 302 HH, .102 ± .005 (.0040 ± .0002 IN.) THK.
2. FINISH: MICRO-DEBURRING (TUMBLE MACH).
   FIRST OPTION: ELECTRO POLISH.
   SECOND OPTION: BRIGHT TUMBLE.
3. NO SHARP EDGES OR BURRS PERMITTED.
4. PART IS SYMMETRICAL ABOUT CENTERLINE.
5. INDICATED DIMENSION DEFINES LENGTH OF TAPER.
6. INDICATED DIMENSION DEFINES SURFACE WHERE 1.83° ANGLE BEGINS.
7. INDICATED DIMENSION DEFINES LIMITS OF .050 FLATNESS TOLERANCE.
8. INDICATED SURFACE MUST BE ABOVE DATUM A AS SHOWN.

REV	ZONE	ECO #	REVISION	APPD
			SEE SHEET 1 IWA9 SK-W0421	



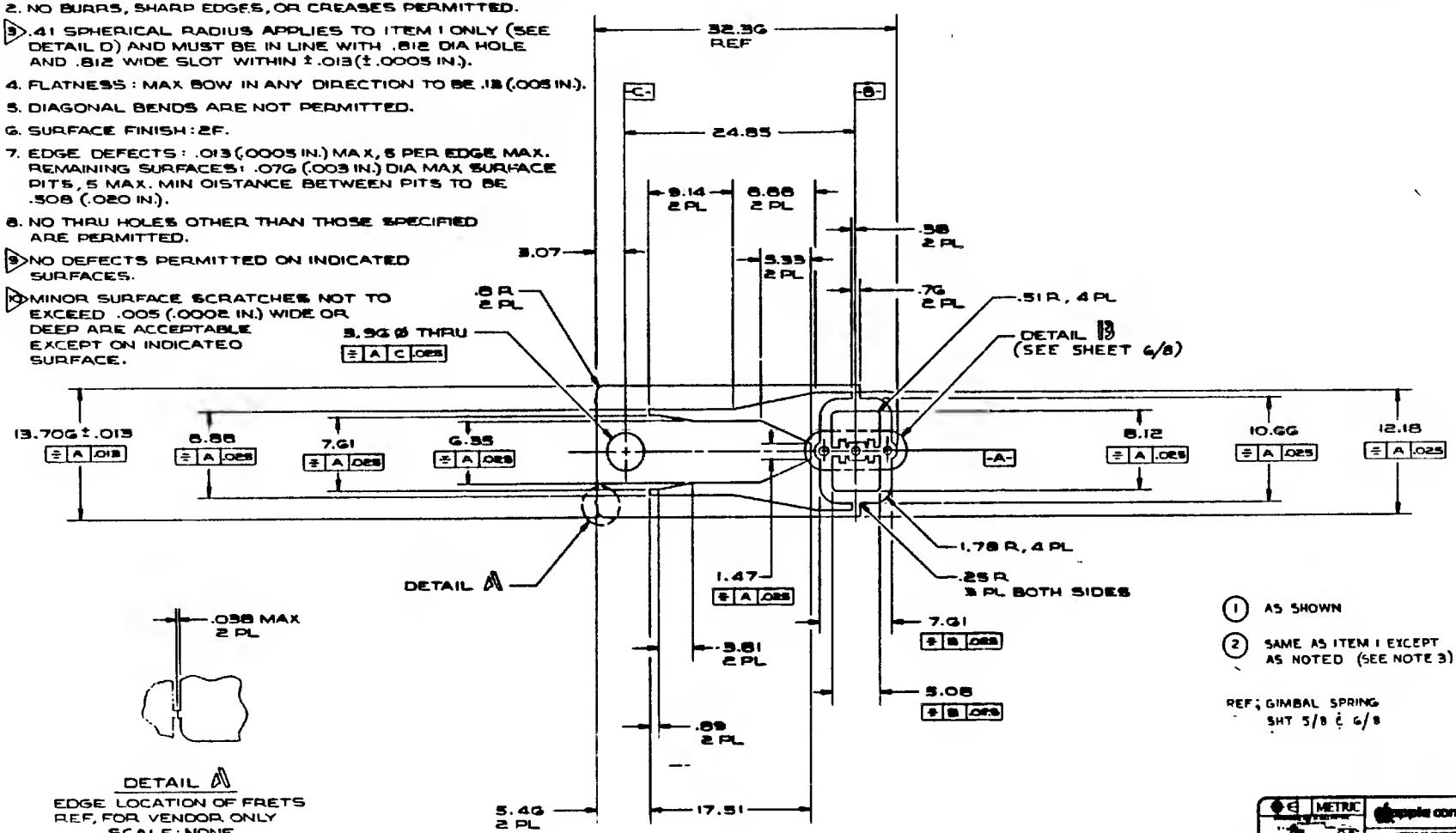
METRIC	apple computer inc.	
MS.D	ASSY, UPPER HEAD SUSPENSION, WIDGET	
10X	D 699-5000-A	4/8

699-5000-A 4/8

QTY	ZONE	ECO #	REVISION	APP'D
			SEE SHEET 1 (WAS SK-W055)	

NOTE: UNLESS OTHERWISE SPECIFIED

1. MATL : SEE NATIONAL MICRONETICS DOCUMENT NO. A-106470.
2. NO BURRS, SHARP EDGES, OR CREASES PERMITTED.
3. .41 SPHERICAL RADIUS APPLIES TO ITEM 1 ONLY (SEE DETAIL D) AND MUST BE IN LINE WITH .812 DIA HOLE AND .812 WIDE SLOT WITHIN ± .013 (± .0005 IN.).
4. FLATNESS : MAX BOW IN ANY DIRECTION TO BE .13 (.005 IN.).
5. DIAGONAL BENDS ARE NOT PERMITTED.
6. SURFACE FINISH : 2F.
7. EDGE DEFECTS : .013 (.0005 IN.) MAX, 5 PER EDGE MAX. REMAINING SURFACES: .076 (.003 IN.) DIA MAX SURFACE PITS, 5 MAX. MIN DISTANCE BETWEEN PITS TO BE .508 (.020 IN.).
8. NO THRU HOLES OTHER THAN THOSE SPECIFIED ARE PERMITTED.
9. NO DEFECTS PERMITTED ON INDICATED SURFACES.
10. MINOR SURFACE SCRATCHES NOT TO EXCEED .005 (.0002 IN.) WIDE OR DEEP ARE ACCEPTABLE EXCEPT ON INDICATED SURFACE.



DETAIL A
EDGE LOCATION OF FRETS REF, FOR VENDOR ONLY
SCALE : NONE

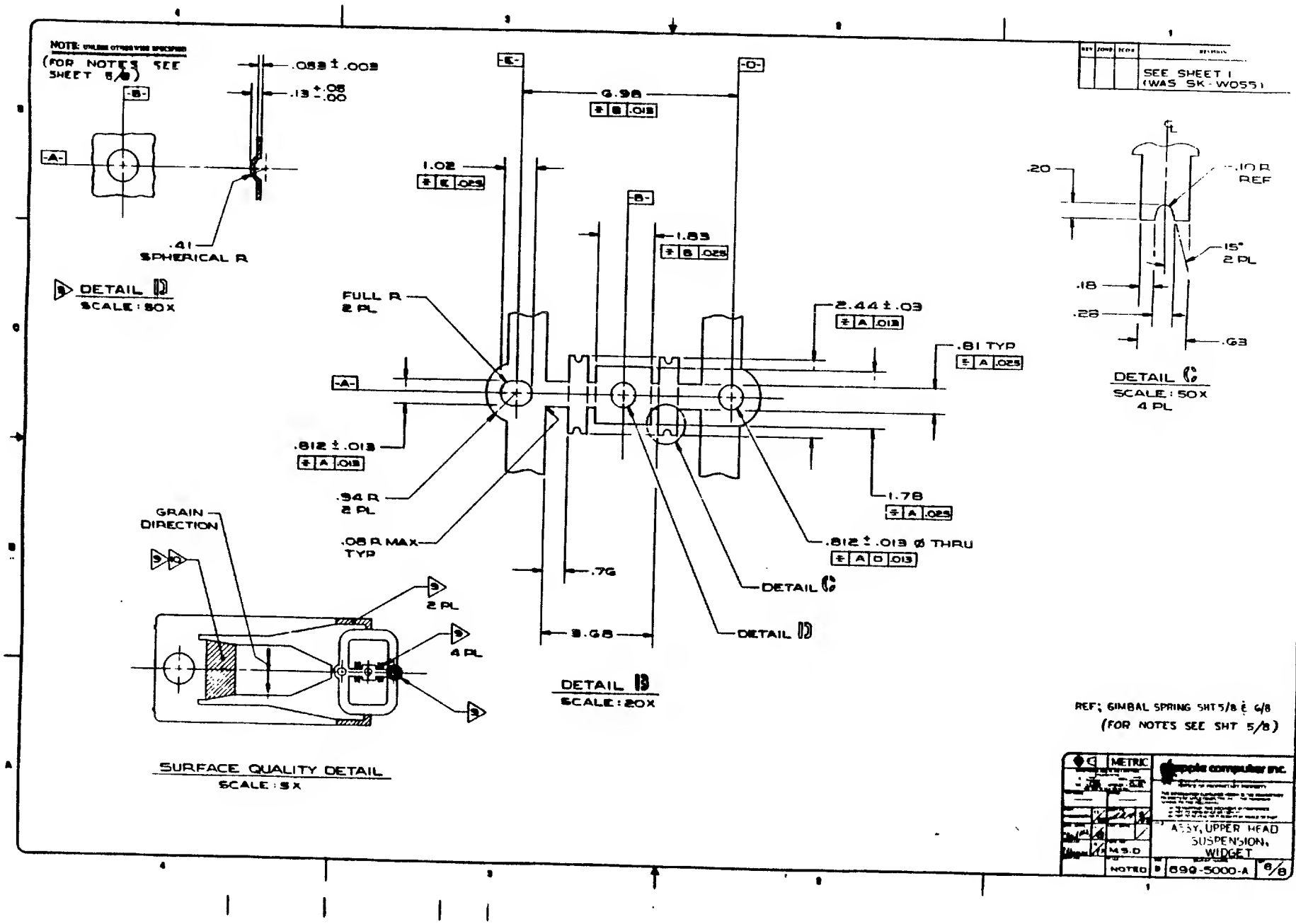
(1) AS SHOWN

(2) SAME AS ITEM 1 EXCEPT AS NOTED (SEE NOTE 3)

REF; GIMBAL SPRING SHT 5/8 & 6/8

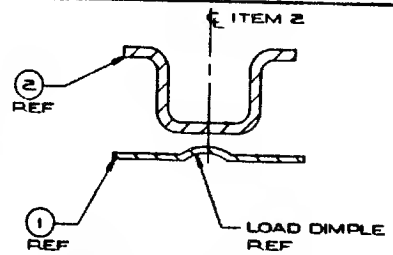
METRIC	apple computer inc.		
M.S.D	ASSY, UPPER-HEAD SUSPENSION, WIDGET		
5x	D	699-5000-A	5/8

699-5000-A 5/8

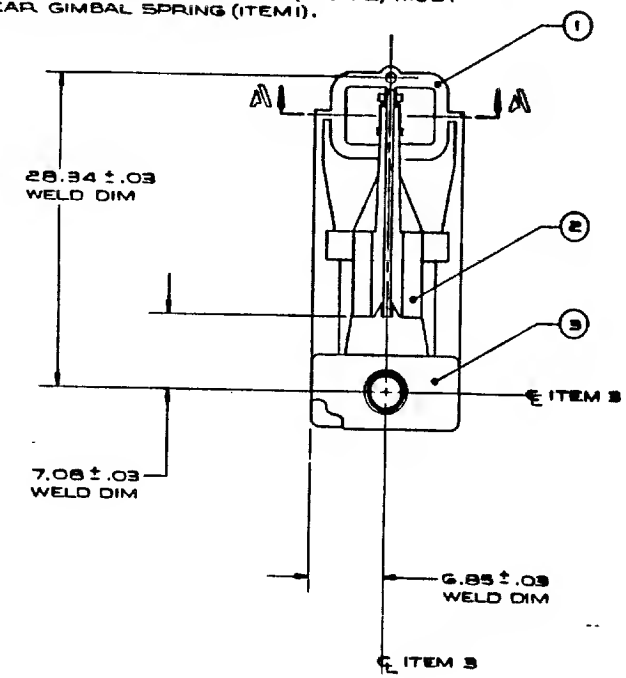

NOTE: UNLESS OTHERWISE SPECIFIED
(FOR NOTES SEE SHEET 5/8)
.053 ± .003
.13 +.05 -.00
.41 SPHERICAL R
DETAIL D
SCALE: 50X
SEE SHEET 1 (WAS SK-W0551)
6.98
1.02
1.83
2.44 ± .03
.81 TYP
FULL R 2 PL
.812 ± .013
.94 R 2 PL
.08 R MAX TYP
.76
3.68
1.78
.812 ± .013 Ø THRU
DETAIL C
DETAIL D
DETAIL B
SCALE: 20X
.20
.10 R REF
15° 2 PL
.18
.28
.63
DETAIL C
SCALE: 50X 4 PL
GRAIN DIRECTION
2 PL
4 PL
SURFACE QUALITY DETAIL
SCALE: 5X
REF; GIMBAL SPRING SHT 5/8 & 6/8
(FOR NOTES SEE SHT 5/8)
METRIC
M5.0
NOTED
apple computer inc.
ASSY, UPPER HEAD SUSPENSION, WIDGET
699-5000-A
6/8
699-5000-A

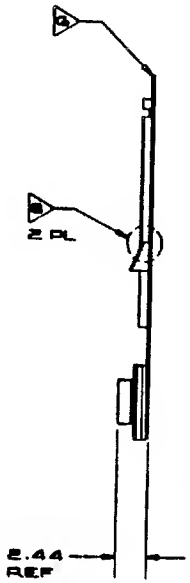
NOTE: UNLESS OTHERWISE SPECIFIED

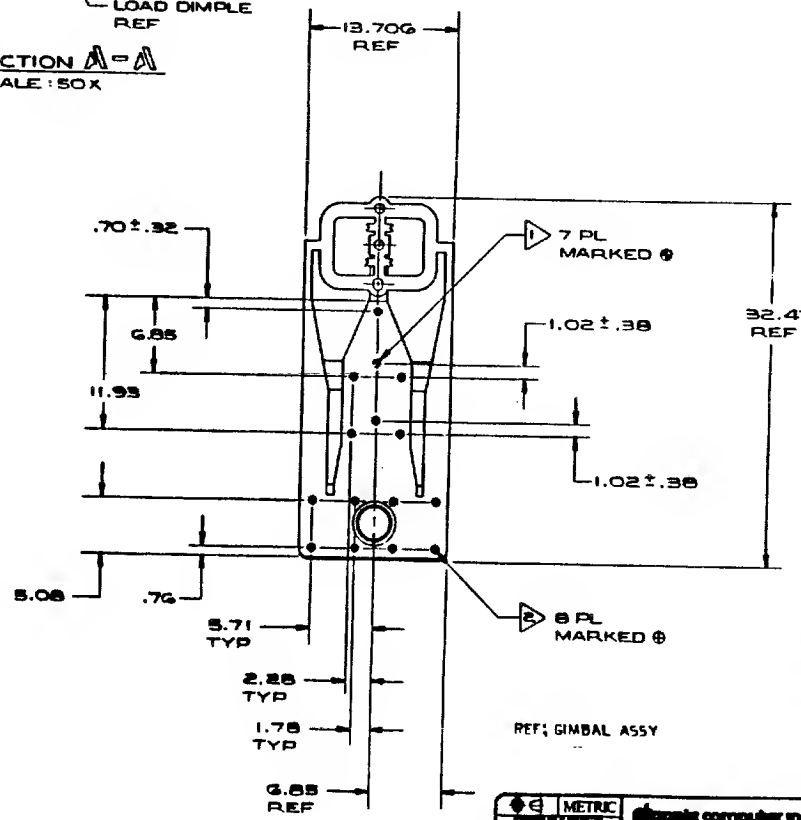
1. SPOT WELD STIFFENER (ITEM 2) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
2. SPOT WELD MOUNT (ITEM 3) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
3. AFTER WELDING, CONTACT POINT BETWEEN LOAD DIMPLE ON GIMBAL SPRING (ITEM 1) AND STIFFENER (ITEM 2) TO BE WITHIN .305 (.012 IN.) OF STIFFENER CENTERLINE.
4. ALL WELDS TO BE SUFFICIENTLY STRONG TO REMOVE NUGGET FROM GIMBAL SPRING (ITEM 1) WHEN PULLED APART.
5. NO CREASES OR KINKS PERMITTED IN GIMBAL SPING (ITEM 1).
6. GIMBAL SPRING (ITEM 1) SHOWN IN FLAT POSITION.
7. LOAD RANGE : 9.5 ± 1.0 GRAMS.
8. CAM LOCATED ON STIFFENER (ITEM 2) MUST CLEAR GIMBAL SPRING (ITEM 1).



5 SECTION A-A
SCALE : 50 X







		SEE SHEET 1 (WAS SK-W057)	

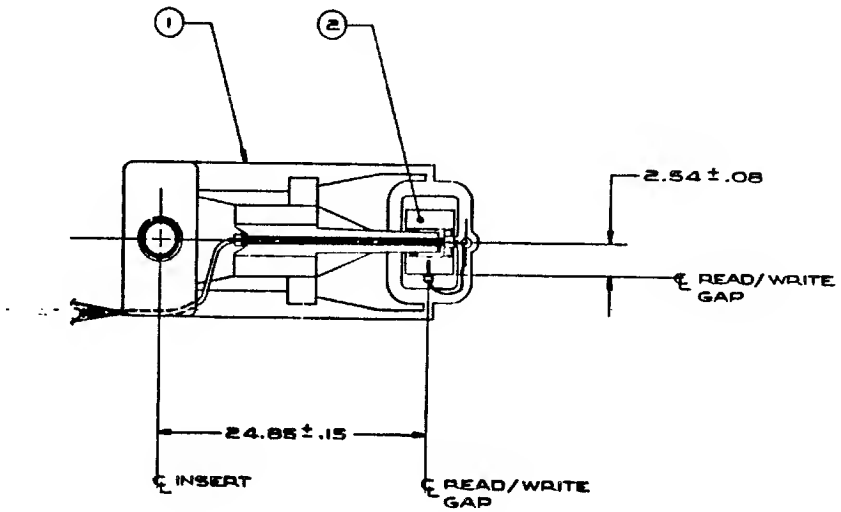
C	METRIC	apple computer inc.	
		ASSY, UPPER-HEAD SUSPENSION, WIDGET	
	M.S.O.	B 699-5000-A	8/8
	5X		

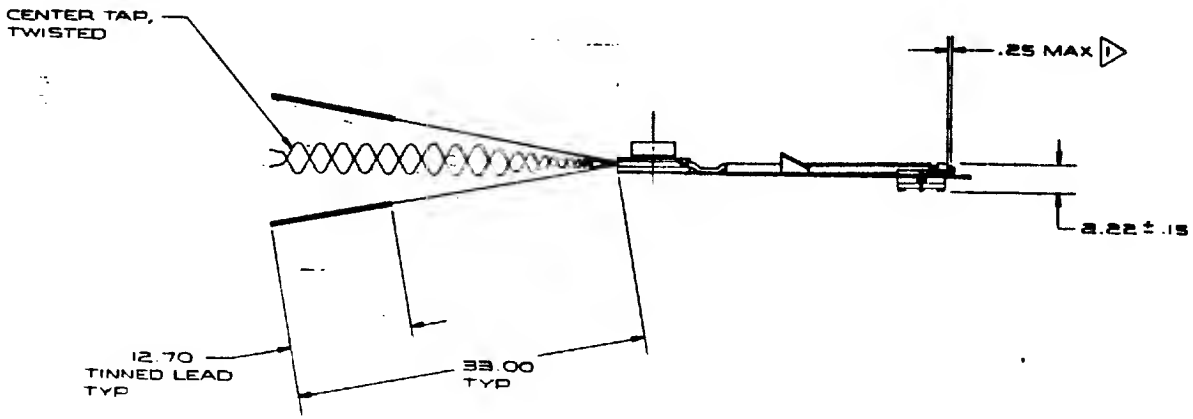
699-5000-A 8/8

NOTE: UNLESS OTHERWISE SPECIFIED

1. INDICATED DIMENSION SPECIFIES LENGTH OF PVC TUBING THAT MAY EXTEND BEYOND LOAD FINGER.

REV	ZONE	ECO #	REVISION	APPD
			SEE SHEET 1 (WAS SK-W059-04)	





REF; ASSY, LOWER-HEAD SUSPENSION

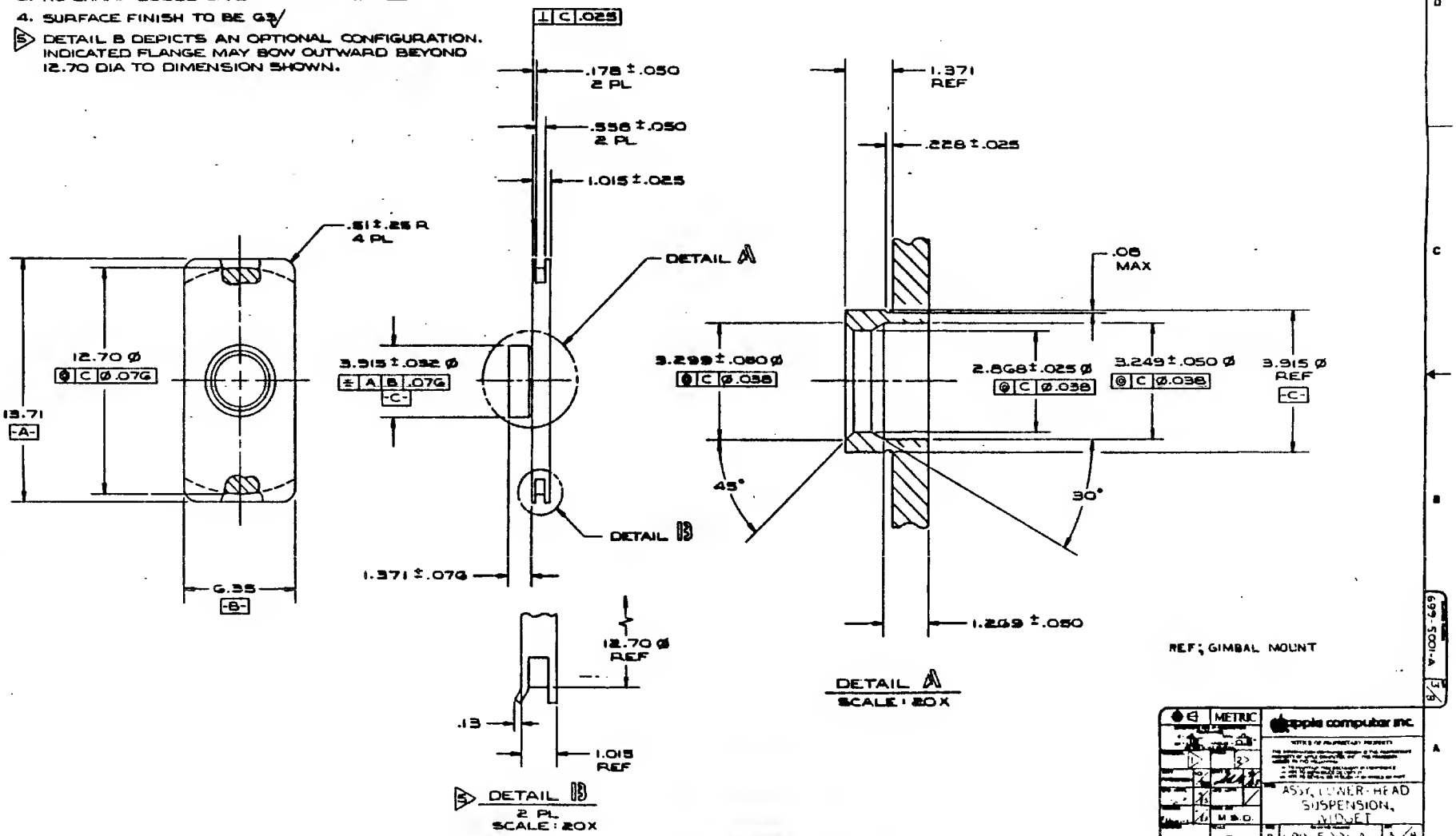
699-5001-A 2/8

METRIC	apple computer inc.		
M.S.D	ASSY, LOWER-HEAD SUSPENSION, WIDGET		
SX	699 5001-A		2/8

NOTE: UNLESS OTHERWISE SPECIFIED

1. MATL: STAINLESS STEEL, 302/303.
2. FINISH: BRIGHT ANNEAL.
3. NO SHARP EDGES OR BURRS PERMITTED.
4. SURFACE FINISH TO BE 63
5. DETAIL B DEPICTS AN OPTIONAL CONFIGURATION. INDICATED FLANGE MAY BOW OUTWARD BEYOND 12.70 DIA TO DIMENSION SHOWN.

REV	ZONE	ECO #	REVISION
			SEE SHEET 1 (MAS SK-N036)



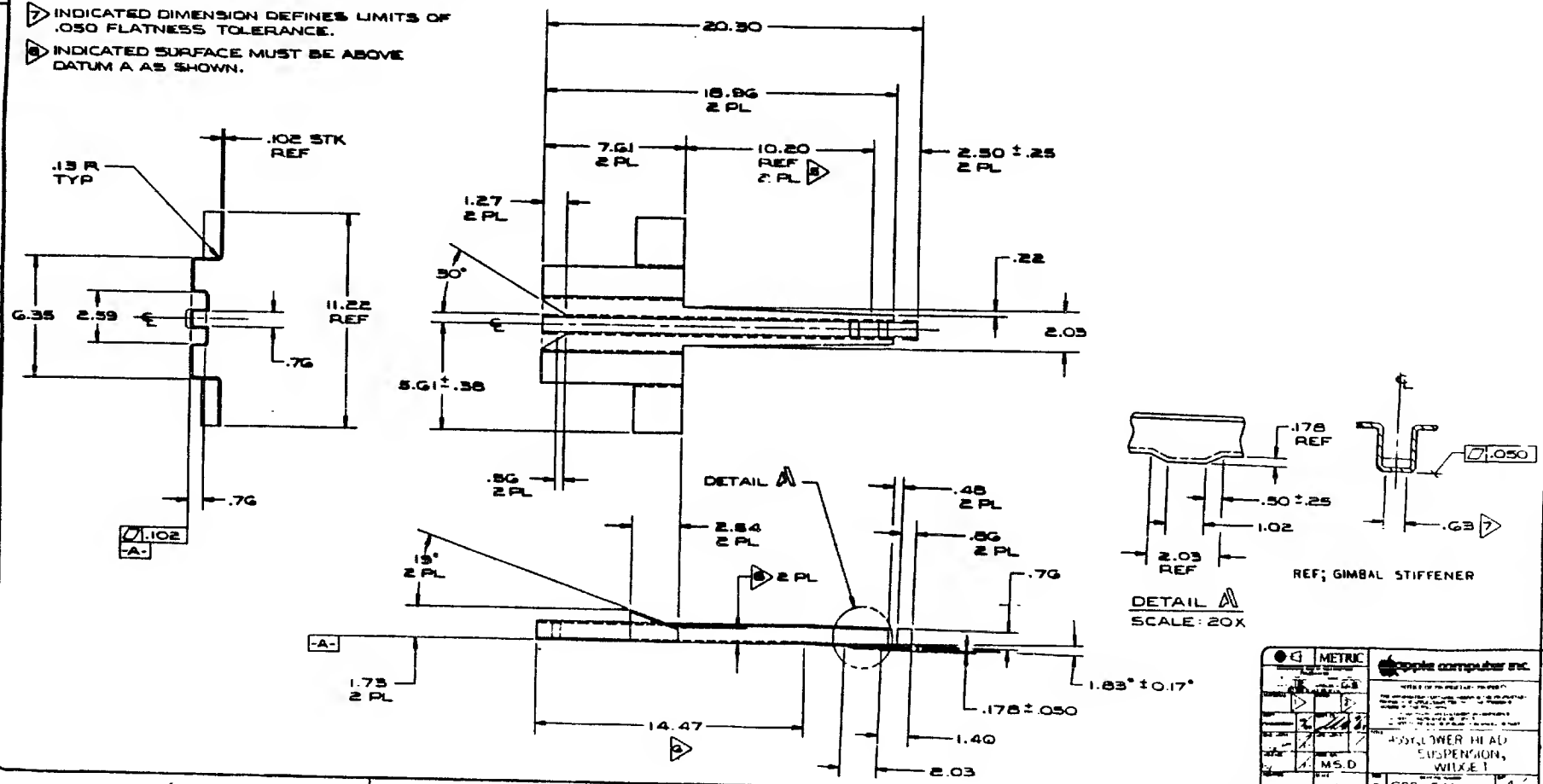
REF: GIMBAL MOUNT

METRIC		apple computer inc.	
M.S.O.		ASSY, UPPER HEAD SUSPENSION, W/DAMPER	
10X		D 699 5001-A	3/8

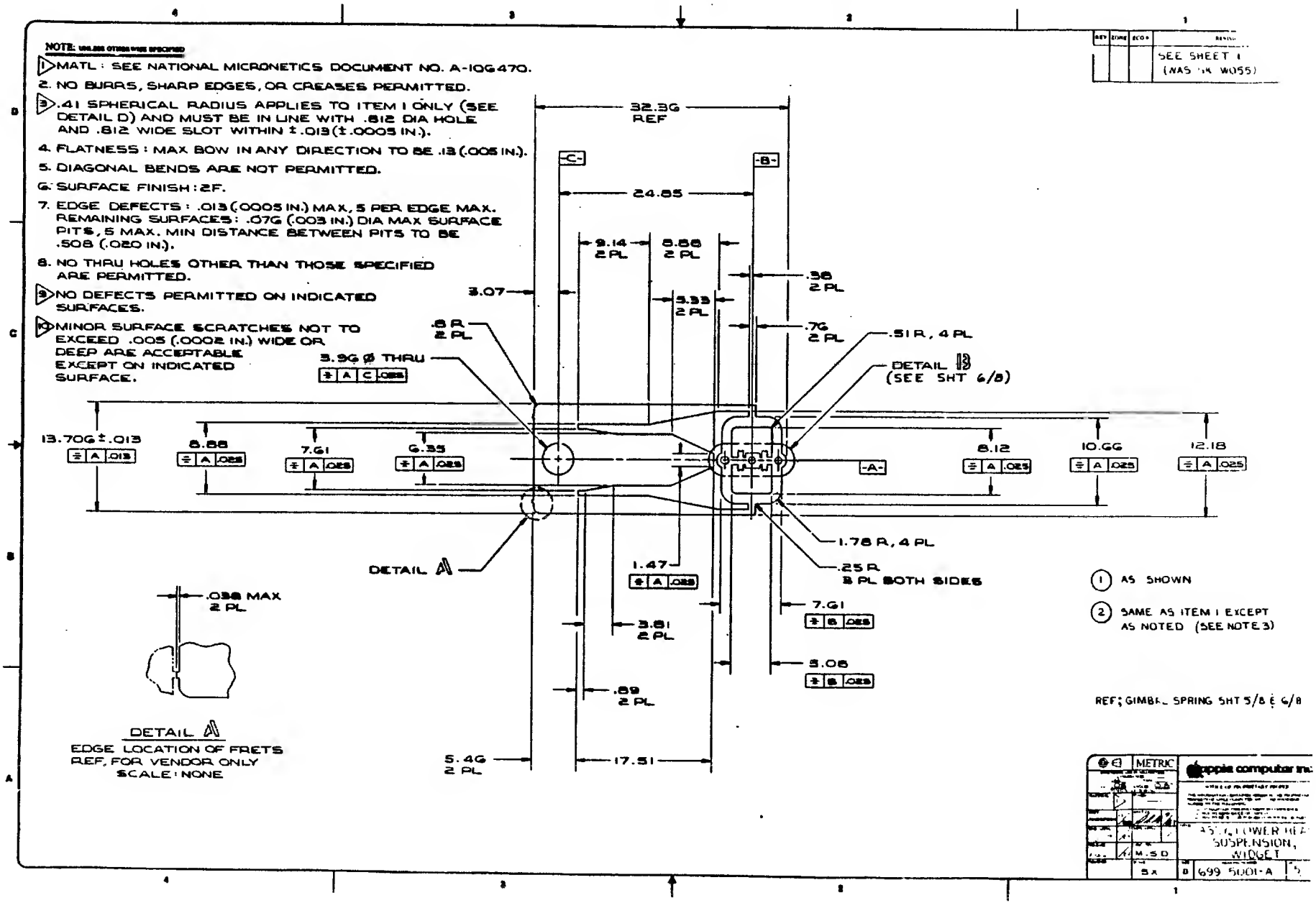
NOTE: UNLESS OTHERWISE SPECIFIED

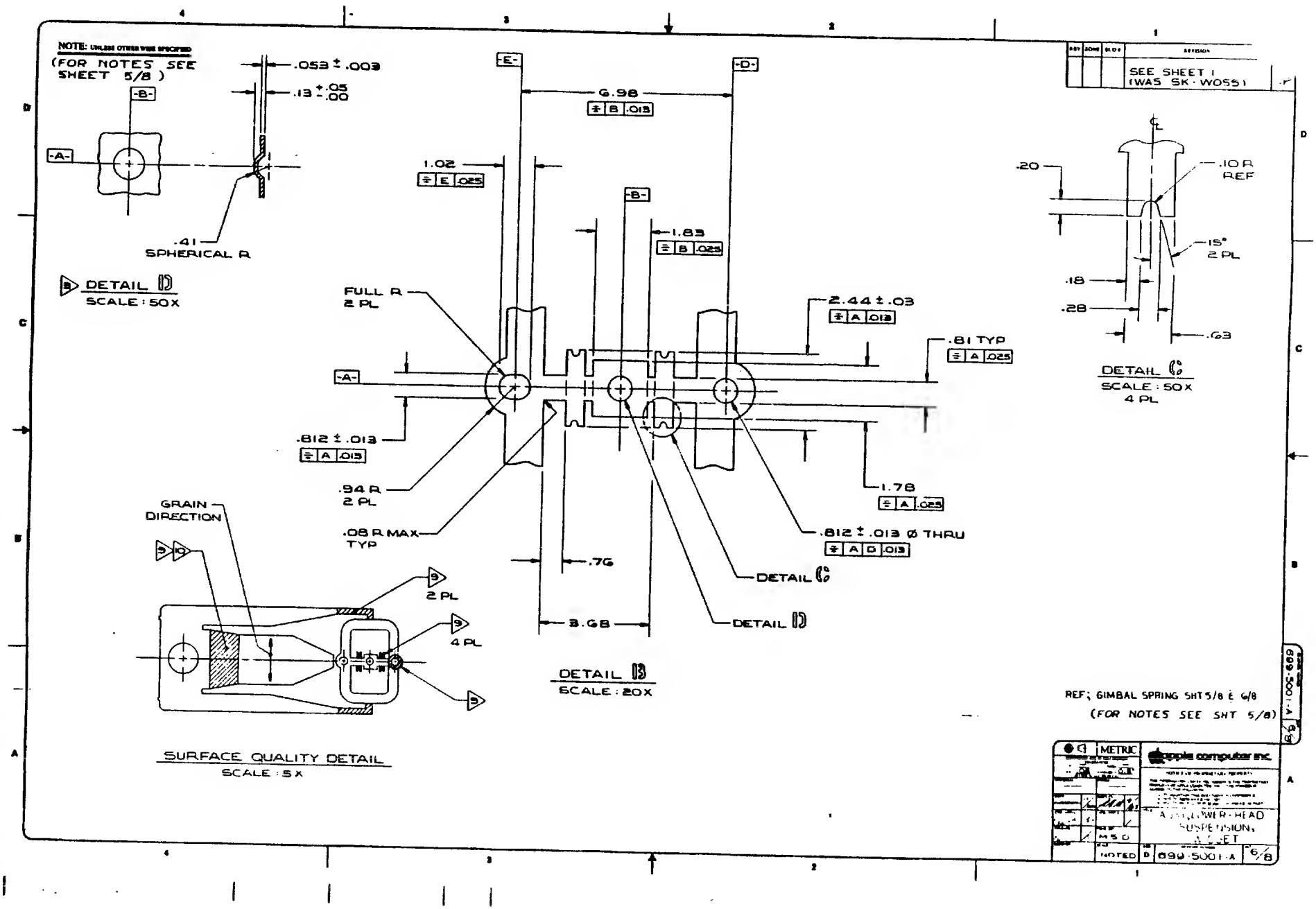
1. MATL: STAINLESS STEEL, 302 HH, .102 ± .005 (.0040 ± .0002 IN.) THK.
2. FINISH: MICRO-DEBURRING (TUMBLE MACH).
   FIRST OPTION: ELECTRO POLISH.
   SECOND OPTION: BRIGHT TUMBLE.
3. NO SHARP EDGES OR BURRS PEMITTED.
4. PART IS SYMMETRICAL ABOUT CENTERLINE.
5. INDICATED DIMENSION DEFINES LENGTH OF TAPER.
6. INDICATED DIMENSION DEFINES SURFACE WHERE 1.83° ANGLE BEGINS.
7. INDICATED DIMENSION DEFINES LIMITS OF .050 FLATNESS TOLERANCE.
8. INDICATED SURFACE MUST BE ABOVE DATUM A AS SHOWN.

REV	ZONE	ECO #	REVISION	APPR
			SEE SHEET 1 (WAS SK-W042)	



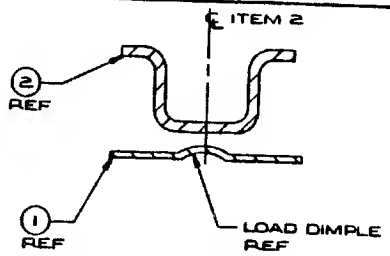
METRIC		apple computer inc.	
M5.D		HDD LOWER HEAD SUSPENSION, W/LXE1	
10X	D	699-5001-A	4/8


NOTE: UNLESS OTHERWISE SPECIFIED
1. MATL : SEE NATIONAL MICRONETICS DOCUMENT NO. A-10G470.
2. NO BURRS, SHARP EDGES, OR CREASES PERMITTED.
3. .41 SPHERICAL RADIUS APPLIES TO ITEM 1 ONLY (SEE DETAIL D) AND MUST BE IN LINE WITH .812 DIA HOLE AND .812 WIDE SLOT WITHIN ±.013 (±.0005 IN.).
4. FLATNESS : MAX BOW IN ANY DIRECTION TO BE .13 (.005 IN.).
5. DIAGONAL BENDS ARE NOT PERMITTED.
6. SURFACE FINISH : 2F.
7. EDGE DEFECTS : .013 (.0005 IN.) MAX, 5 PER EDGE MAX. REMAINING SURFACES : .07G (.003 IN.) DIA MAX SURFACE PITS, 5 MAX. MIN DISTANCE BETWEEN PITS TO BE .508 (.020 IN.).
8. NO THRU HOLES OTHER THAN THOSE SPECIFIED ARE PERMITTED.
9. NO DEFECTS PERMITTED ON INDICATED SURFACES.
10. MINOR SURFACE SCRATCHES NOT TO EXCEED .005 (.0002 IN.) WIDE OR DEEP ARE ACCEPTABLE EXCEPT ON INDICATED SURFACE.
SEE SHEET 1 (WAS IN W055)
32.3G REF
24.85
-C-
-B-
-A-
9.14 2 PL
8.86 2 PL
3.07
.38 2 PL
5.33 2 PL
.7G 2 PL
.8 R 2 PL
.51 R, 4 PL
3.9G Ø THRU ± A C .025
DETAIL B (SEE SHT 6/8)
13.70G ±.013 ± A .013
8.86 ± A .025
7.61 ± A .025
6.35 ± A .025
8.12 ± A .025
10.GG ± A .025
12.18 ± A .025
1.78 R, 4 PL
.25 R 8 PL BOTH SIDES
DETAIL A
1.47 ± A .025
7.61 ± B .025
3.81 2 PL
5.08 ± B .025
.89 2 PL
5.4G 2 PL
17.51
.038 MAX 2 PL
DETAIL A
EDGE LOCATION OF FRETS REF, FOR VENDOR ONLY
SCALE : NONE
(1) AS SHOWN
(2) SAME AS ITEM 1 EXCEPT AS NOTED (SEE NOTE 3)
REF; GIMBAL SPRING SHT 5/8 & 6/8
METRIC
M.S.D
SX
apple computer inc.
ASY, LOWER HEA SUSPENSION, WIDGET
D 699 5001-A

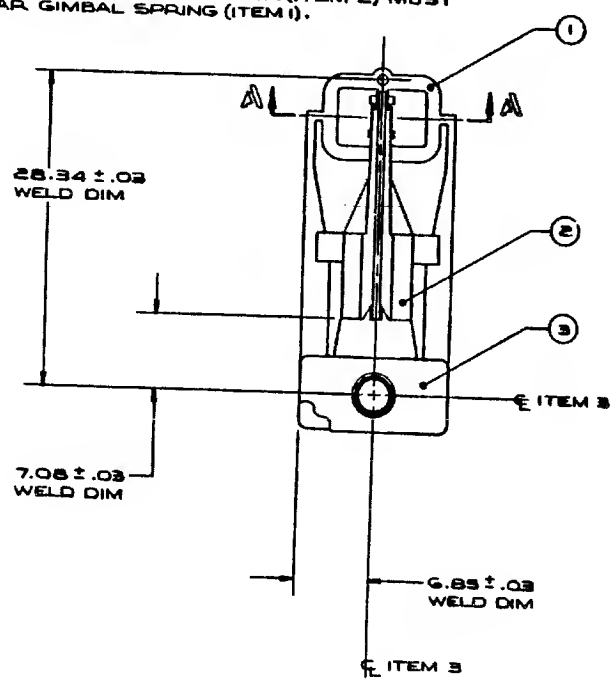

NOTE: UNLESS OTHERWISE SPECIFIED
(FOR NOTES SEE SHEET 5/8)
.053 ± .003
.13 +.05 -.00
-A-
-B-
.41 SPHERICAL R
DETAIL D
SCALE : 50X
-E-
-D-
6.98
⌖ B .013
1.02
⌖ E .025
-B-
1.83
⌖ B .025
FULL R 2 PL
2.44 ± .03
⌖ A .013
.81 TYP
⌖ A .025
-A-
.812 ± .013
⌖ A .013
.94 R 2 PL
.08 R MAX TYP
1.78
⌖ A .025
.812 ± .013 Ø THRU
⌖ A D .013
.76
3.68
DETAIL C
DETAIL D
DETAIL B
SCALE : 20X
.20
.10 R REF
15° 2 PL
.18
.28
.63
DETAIL C
SCALE : 50X
4 PL
GRAIN DIRECTION
9
10
2 PL
4 PL
SURFACE QUALITY DETAIL
SCALE : 5X
SEE SHEET 1 (WAS SK-W055)
REF; GIMBAL SPRING SHT 5/8 & 6/8
(FOR NOTES SEE SHT 5/8)
METRIC
apple computer inc.
A/I LOWER HEAD SUSPENSION, ASSY
NOTED
B
699-5001-A
6/8

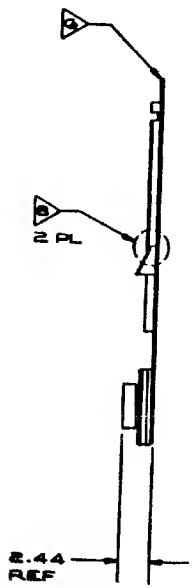
NOTE: UNLESS OTHERWISE SPECIFIED

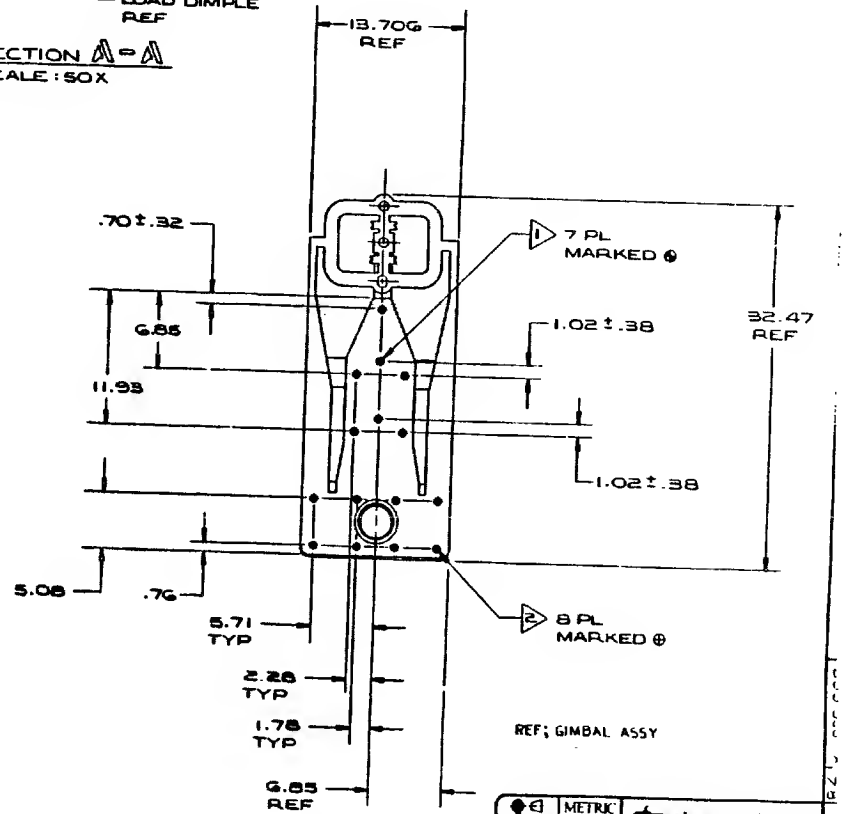
1. SPOT WELD STIFFENER (ITEM 2) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
2. SPOT WELD MOUNT (ITEM 3) TO GIMBAL SPRING (ITEM 1) IN LOCATIONS SHOWN.
3. AFTER WELDING, CONTACT POINT BETWEEN LOAD DIMPLE ON GIMBAL SPRING (ITEM 1) AND STIFFENER (ITEM 2) TO BE WITHIN .305 (.012 IN.) OF STIFFENER CENTERLINE.
4. ALL WELDS TO BE SUFFICIENTLY STRONG TO REMOVE NUGGET FROM GIMBAL SPRING (ITEM 1) WHEN PULLED APART.
5. NO CREASES OR KINKS PERMITTED IN GIMBAL SPING (ITEM 1).
6. GIMBAL SPRING (ITEM 1) SHOWN IN FLAT POSITION.
7. LOAD RANGE : 9.5 ± 1.0 GRAMS.
8. CAM LOCATED ON STIFFENER (ITEM 2) MUST CLEAR GIMBAL SPRING (ITEM 1).



3 SECTION A-A
SCALE : 50X

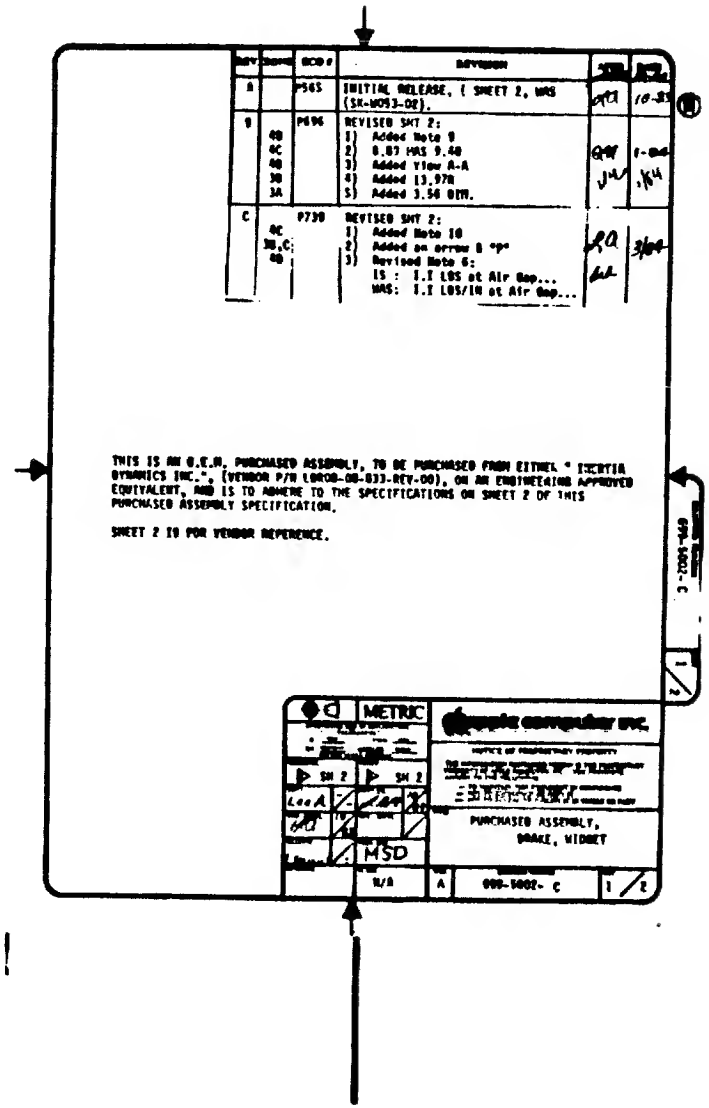






REF; GIMBAL ASSY

	METRIC	apple computer inc.	
	M & C	ASSY, LOWER HEAD SUSPENSION,	
	SA	D 699-5001-A	B


REV
ZONE
ECO #
DESCRIPTION
A
P565
INITIAL RELEASE. (SHEET 2, WAS (SK-M093-02).
10-83
B
P696
REVISED SHT 2:
4B 4C 4B 3B 3A
1) Added Note 9
2) 0.87 MAS 9.40
3) Added View A-A
4) Added 13.97R
5) Added 3.56 DIM.
C
P730
REVISED SHT 2:
4C 3B,C 4B
1) Added Note 10
2) Added an arrow @ "P"
3) Revised Note 6:
IS : I.I LOS at Air Gap...
WAS: I.I LOS/IN at Air Gap...
3/84
THIS IS AN O.E.M. PURCHASED ASSEMBLY, TO BE PURCHASED FROM EITHER " INERTIA DYNAMICS INC.", (VENDOR P/N LDROB-08-033-REV-00), OR AN ENGINEERING APPROVED EQUIVALENT, AND IS TO ADHERE TO THE SPECIFICATIONS ON SHEET 2 OF THIS PURCHASED ASSEMBLY SPECIFICATION.
SHEET 2 IS FOR VENDOR REFERENCE.
000-5002-C
1/2
METRIC
SH 2
SH 2
MSD
N/A
A
PURCHASED ASSEMBLY,
BRAKE, WIDNET
000-5002- C
1/2

NOTE: UNLESS OTHERWISE SPECIFIED

1. MATL: LEADS - AWG NO. 26, UL 1429
   CONNECTOR - 26 GA, 640442-2 AMP MTA - 100, CLOSED END HOUSING.
   BRAKE PAD - NEOPRENE FRICTION MATL, 60 DUROMETER.
2. FINISH: ZINC YELLOW CHROMATE ON POLE PIECES, CORE AND CLAPPER.
3. ARROW INDICATES NORTH SEEKING MAGNETIC POLE (PLUS POSITIVE).
   WHEN PIN 1 ON CONNECTOR IS POSITIVE (+) AND PIN 2 IS NEGATIVE (-) MAGNETIC FIELD MUST BE IN DIRECTION SHOWN (MUST REPEL THE NORTH SEEKING END OF A COMPASS NEEDLE).
4. INDICATES DIMENSION IS WITH BRAKE ENERGIZED.
5. SPRING FORCE TO BE 0.8 TO 1.1 LBS. AT MIN GAP OF .25 (.010 IN.).
6. ELECTRICAL DATA: (20°C PART TEMPERATURE)
   A. RESISTANCE: 12.5 TO 14.0 OHMS.
   B. AT SET GAP OF .51 (.020 IN), BRAKE MUST OPERATE AT 9.5V, 750 mA MAX.
   C. BRAKE MUST HOLD AT 3.5V, 100 mA MAX.
7. BRAKE ASSY. TO BE FREE OF DIRT AND PACKAGED TO PREVENT CONTAMINATION.

BRAKE PAD AND MOUNTING PINS OMITTED FROM VIEW A-A FOR CLARITY.

BRAKE PAD SHALL WITHSTAND A 'SHEAR' FORCE OF 'P' ≥ 7LBS APPLIED IN ANY DIRECTION IN A PLANE PARALLEL TO THE PLATE.

'P'

18.20 ± .25

11.17 MAX

25.38 ± .13

8.89

3.68 ± .13

.51

6.09 ± .13

1.60 2 PL

C'DRILL OR C'BORE Ø 4.00 TO DEPTH SHOWN, 2 PL

VIEW A-A
SCALE: 4X

PLATE MODIFICATION

13.97 R

5.84

19.67 MAX

-A-

9.56

6.55 ± .51

.63 ± .51

50.8 ± 3.2

METRIC	apple computer inc.		
M.S.D.	ASSY, BRAKE, WIDGET (PURCHASED ASSY)		
4X	B	699-5002-C	2/2

699-5002-C

...NLESS STEEL, 300 SERIES.
...AWG NO. 28 (7×36), PVC INSULATED, TWISTED PAIR, RED AND BLACK
...JECTOR H3G AMP NO. 640443-5
SSI" AND DATE CODE (MONTH/YEAR) IN LOCATION SHOWN.

...IFICATIONS:
D.C. RESISTANCE - 130 OHMS ±10%
INDUCTANCE - 7 mH ± 2 mH
OUTPUT VOLTAGE - 1.0 ± 0.8 V_{pp}

4. TEST WHEEL SPECIFICATIONS (SEE FIGURE A)
MATL - LOW CARBON STEEL
DIAMETER - 72.14 (2.84 IN.)
NO. OF SLOTS - 25
SLOT SIZE - 1.1 (0.045 IN.) WIDE × 1.1 (0.045 IN.) DEEP.
VELOCITY - 3090 RPM
AIR GAP - 0.38 ±0.08 (0.015 ± 0.003 IN.)
LOAD - 100K OHMS

5. TEMPERATURE RANGE - -40°C TO +105°C (-40°F TO +221°F)
6. POLARITY: RED LEAD (PIN 5) POSITIVE WITH RESPECT TO BLACK LEAD (PIN 1) WITH APPROACH OF FERROUS METAL.
7. SENSOR ASSY TO BE FREE OF LOOSE OR FOREIGN PARTICLES & PACKAGED TO PREVENT CONTAMNATION.

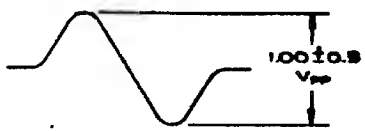


FIG.B
WAVE FORM

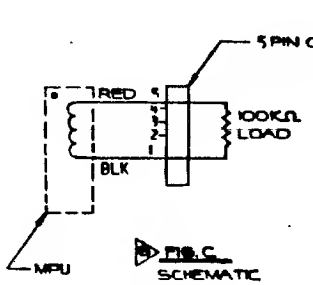
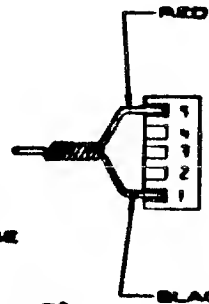
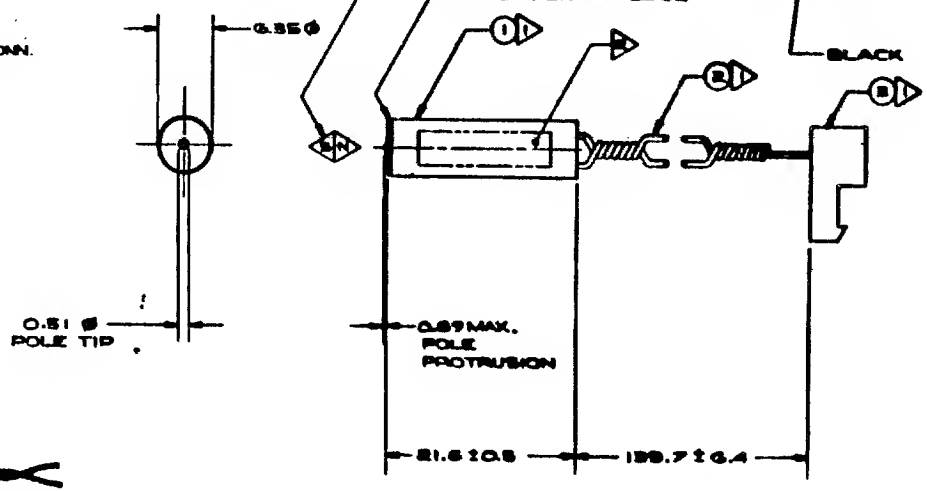


FIG.C
SCHEMATIC





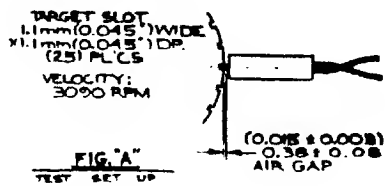


FIG "A"
TEST SET UP

THIS IS AN O.E.M. PURCHASED ASSEMBLY, TO BE PURCHASED FROM EITHER TRANSDUCER SYSTEMS, INC., P/N VRZ80-8450-SP, OR AN ENGINEERING APPROVED EQUIVALENT, AND IS TO ADHERE TO THE SPECIFICATIONS AS SHOWN ON THIS DRAWING.

PURCHASED ASSY, MAGNET

4X | B | 699-5004-D | 1/1

```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0917
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH          STEP

ASSY 677-0102                    EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY--  F              E
 ITM COMPONENT       DESCRIPTION        MOD TYP FROM    THRU    Q QTY PER ASSY UOM X
 091 351-2074        QUAD DARLINGTON XS ME  D 090183 123199  N        1.000 EA
 002 337-0421        IC, COP421, CMOS,  ME  D 090183 123199  N        1.000 EA
 003 327-0451        IC, 75451, PERF PO ME  D 090183 123199  N        1.000 EA
 004 372-3904        TRANSISTOR,NPN SW. ME  D 090183 123199  N        1.000 EA
 005 372-4403        TRANISTOR, PNP 2N4 ME  D 090183 123199  N        2.000 EA
 006 376-0017        TRANSISTOR, NPN 30 ME  D 090183 123199  N        1.000 EA
 007 376-0036        TRANSISTOR,AMPLIFI ME  D 090183 123199  N        1.000 EA
 008 371-4001        DIODE RECTIFIER 1N ME  D 101983 123199  N       10.000 EA
 009 378-0006        LED, GREEN         ME  D 090183 123199  N        1.000 EA
 010 101-4101        RES 100 OHM 1/4W 5 ME  D 090183 123199  N        2.000 EA
 011 101-4201        RES 200 OHM 1/4W 5 ME  D 090183 123199  N        1.000 EA
 012 101-4102        RES 1K OHM 1/4W 5% ME  D 090183 123199  N        2.000 EA
EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                        **

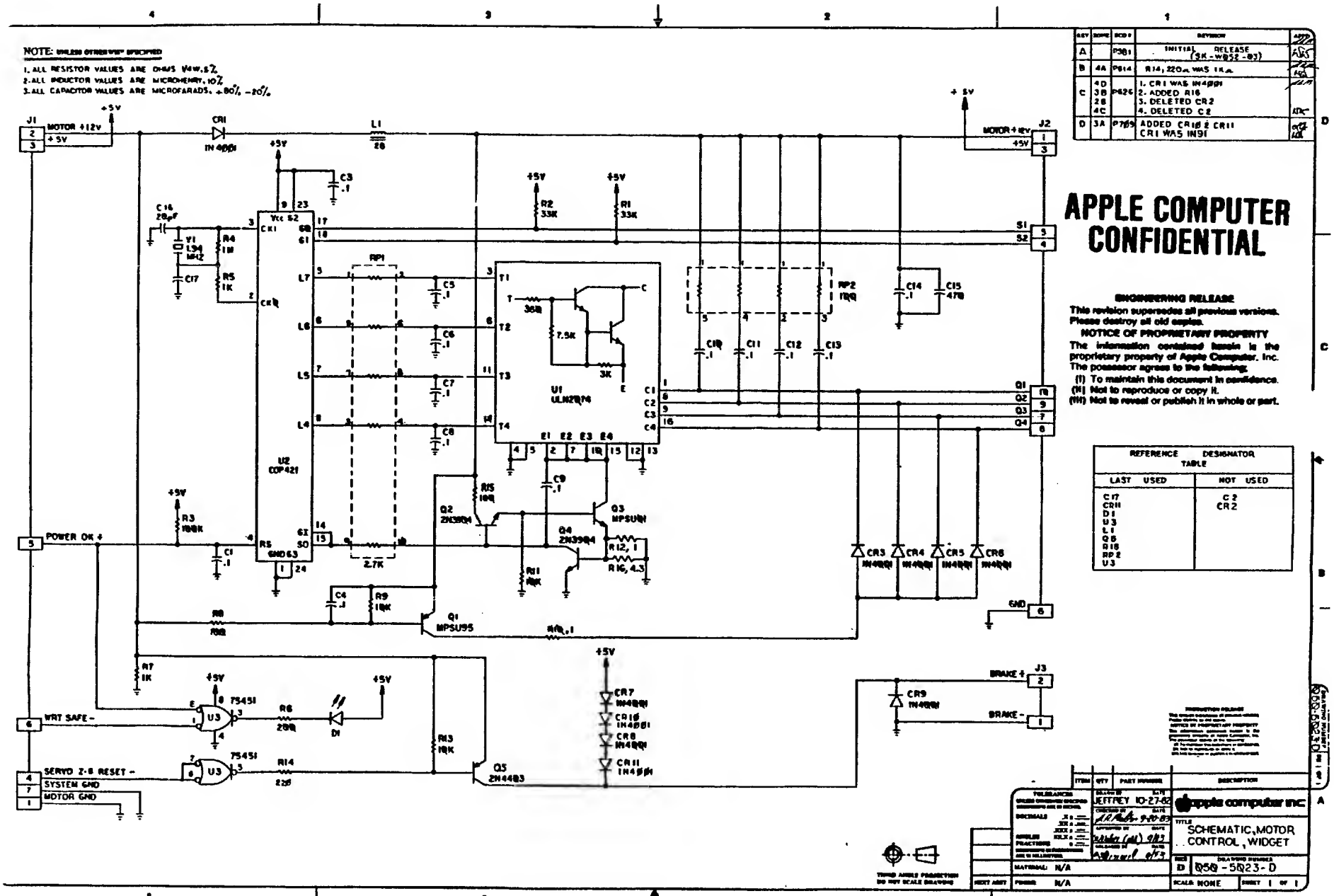
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0917
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH          STEP

ASSY 677-0102                    EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY--  F              E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM    THRU    Q QTY PER ASSY UOM X
013 101-4103         RES 10K OHM 1/4W 5 ME  D 090183 123199  N        3.000 EA
 14 101-4333         RES 33K OHM 1/4W 5 ME  D 090183 123199  N        2.000 EA
  5 101-4104         RES 100K OHM 1/4W  ME  D 090183 123199  N        1.000 EA
016 101-4105         RES 1M OHM 1/4W 5% ME  D 090183 123199  N        1.000 EA
017 101-2010         RES 1 OHM 1/2W 5%  ME  D 090183 123199  N        2.000 EA
018 112-0013         RES NETWORK 5 X 2. ME  D 090183 123199  N        1.000 EA
019 111-0049         RES NETWORK 4 X 10 ME  D 090183 123199  N        1.000 EA
020 137-5401         CAP DIP MICA 20 pF ME  D 081583 123199  N        1.000 EA
021 130-0007         CAP CER AXIAL .1 U ME  D 090183 123199  N       13.000 EA
022 125-6702         CAP ELECT 470 UF 1 ME  D 090183 123199  N        1.000 EA
023 155-7103         CHOKE, COIL 28uH   ME  D 090183 123199  N        1.000 EA
024 197-0027         CRYSTAL, 1.940 MHz ME  D 090183 123199  N        1.000 EA
EXPLOSION LEVEL :    1

ASSY 677-0102                    EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY--  F              E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM    THRU    Q QTY PER ASSY UOM X
025 515-0200         CONN,HDR,STR,LKG,2 ME  D 090183 053084  N        0.000 EA
026 515-0207         CONN,HDR,STR,LKG,7 ME  D 090183 123199  N        1.000 EA
027 515-0103         CONN,HDR,RT ANG,10 ME  D 090183 123199  N        1.000 EA
030 511-2401         SOCKET, IC 24 PIN  ME  D 090183 123199  N        1.000 EA
033 820-5012         PCB,MOTOR CONTROL, ME  D 101983 123199  N        1.000 EA
034 101-4221         RES 220 OHM 1/4W 5 ME  D 100383 123199  N        1.000 EA
035 101-8043         RES 4.3 OHM 1/8W 5 ME  D 051684 123199  N        1.000 EA
036 371-0091         DIODE RECTIFIER 1N ME  D 101983 020784  N        0.000 EA
 37 515-0206         CONN,HDR,STR,LKG,2 ME  D 060184 123199  N        1.000 EA
038 130-0120         CAP CER AXIAL 22 P ME  D 060184 123199  N        1.000 EA
  9 050-5023         SCHEMATIC,MOTOR CO ME  D 101983 123199  N        0.000 EA

EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                 **
```



REV	ZONE	ECO #	REVISION	
A		P581	INITIAL RELEASE (SK-WB52-03)	
B	4A	P814	R14, 220Ω WAS 1K Ω	
C	4D 3B 2B 4C	P826	1. CR1 WAS IN4001 2. ADDED R16 3. DELETED CR2 4. DELETED C2	
D	3A	P769	ADDED CR10 & CR11 CR1 WAS IN91	

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REFERENCE DESIGNATOR TABLE

LAST USED	NOT USED
C17	C2
CR11	CR2
D1	
U3	
L1	
Q5	
D10	
RP2	
U3	

ITEM	QTY	PART NUMBER	DESCRIPTION

PRELIMINARY
UNLESS OTHERWISE DIMENSIONS ARE IN DECIMAL
DECIMALS
ANGLES
FRACTIONS
MATERIAL N/A
NEXT ASSY
FINISH N/A
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

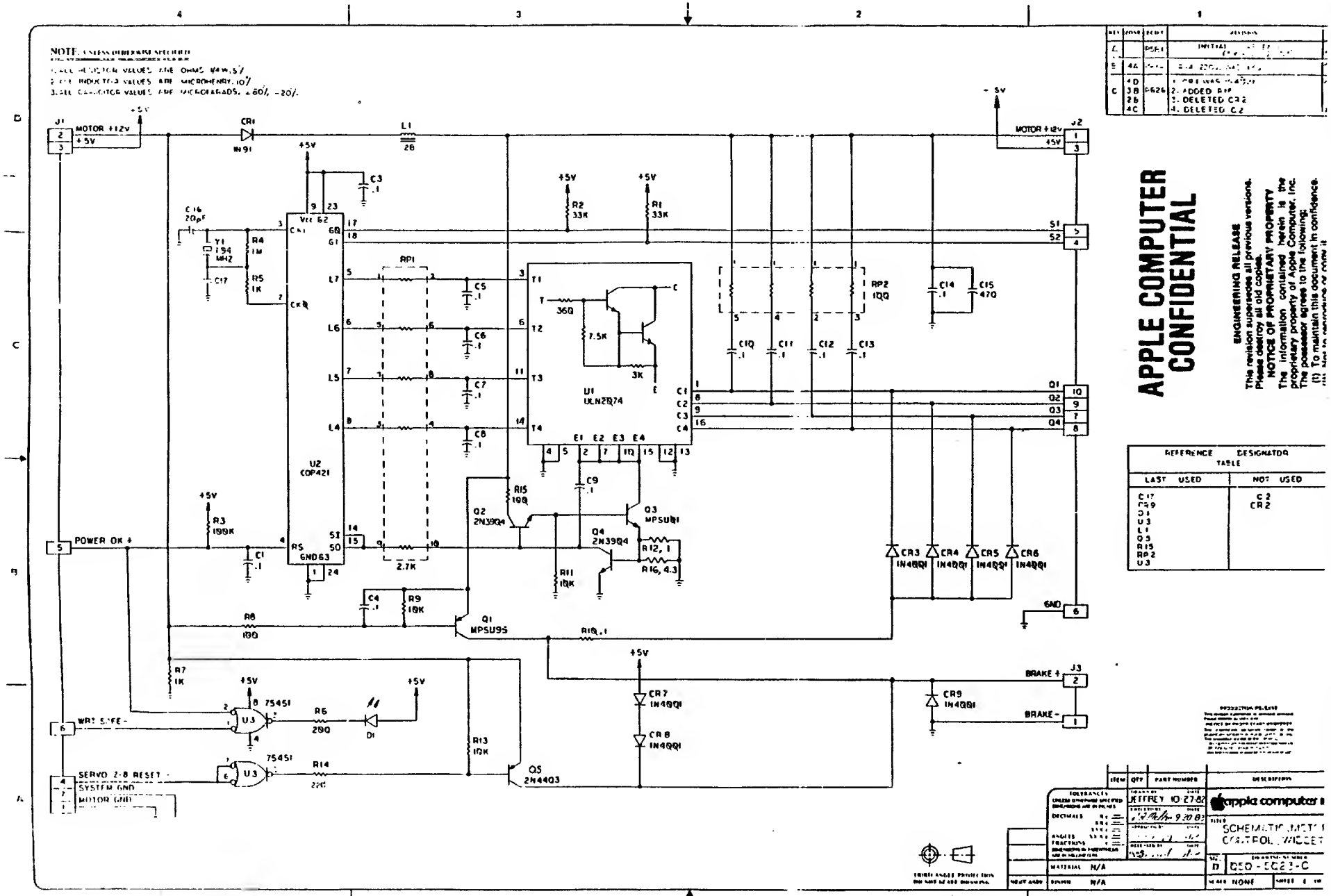
DRAWN JEFFREY 10-27-82
CHECKED
APPROVED
ENGINEER
MFG

apple computer inc

TITLE SCHEMATIC, MOTOR CONTROL, WIDGET

SIZE D
DRAWING NUMBER 050-5023-D
SCALE NONE
SHEET 1 OF 1

050-5023-D
DRAWING NUMBER


NOTE: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTOR VALUES ARE OHMS, 1/4W, 5%
2. ALL INDUCTOR VALUES ARE MICROHENRY, 10%
3. ALL CAPACITOR VALUES ARE MICROFARADS, +80%, -20%
J1
MOTOR +12V
+5V
CR1
IN91
L1
2B
C3
.1
C16
20pF
Y1
1.994
MHZ
C17
R4
1M
R5
1K
U2
COP421
RS
GND63
RPI
2.7K
C5
C6
C7
C8
R2
33K
R1
33K
RP2
100
U1
ULN2074
360
7.5K
3K
C9
.1
C10
C11
C12
C13
C14
.1
C15
470
J2
MOTOR +12V
+5V
S1
GND
Q1
Q2
Q3
Q4
R15
100
Q2
2N3904
Q3
MPSU01
Q4
2N3904
R12, 1
R16, 4.3
R11
10K
R3
100K
POWER OK +
C1
.1
C4
.1
R9
10K
Q1
MPSU95
R8
100
R10, 1
CR3
IN4001
CR4
IN4001
CR5
IN4001
CR6
IN4001
R7
1K
WRT SAFE -
SERVO Z-8 RESET -
SYSTEM GND
MOTOR GND
U3
75451
R6
290
D1
R14
220
R13
10K
Q5
2N4403
CR7
IN4001
CR8
IN4001
CR9
IN4001
BRAKE +
BRAKE -
J3
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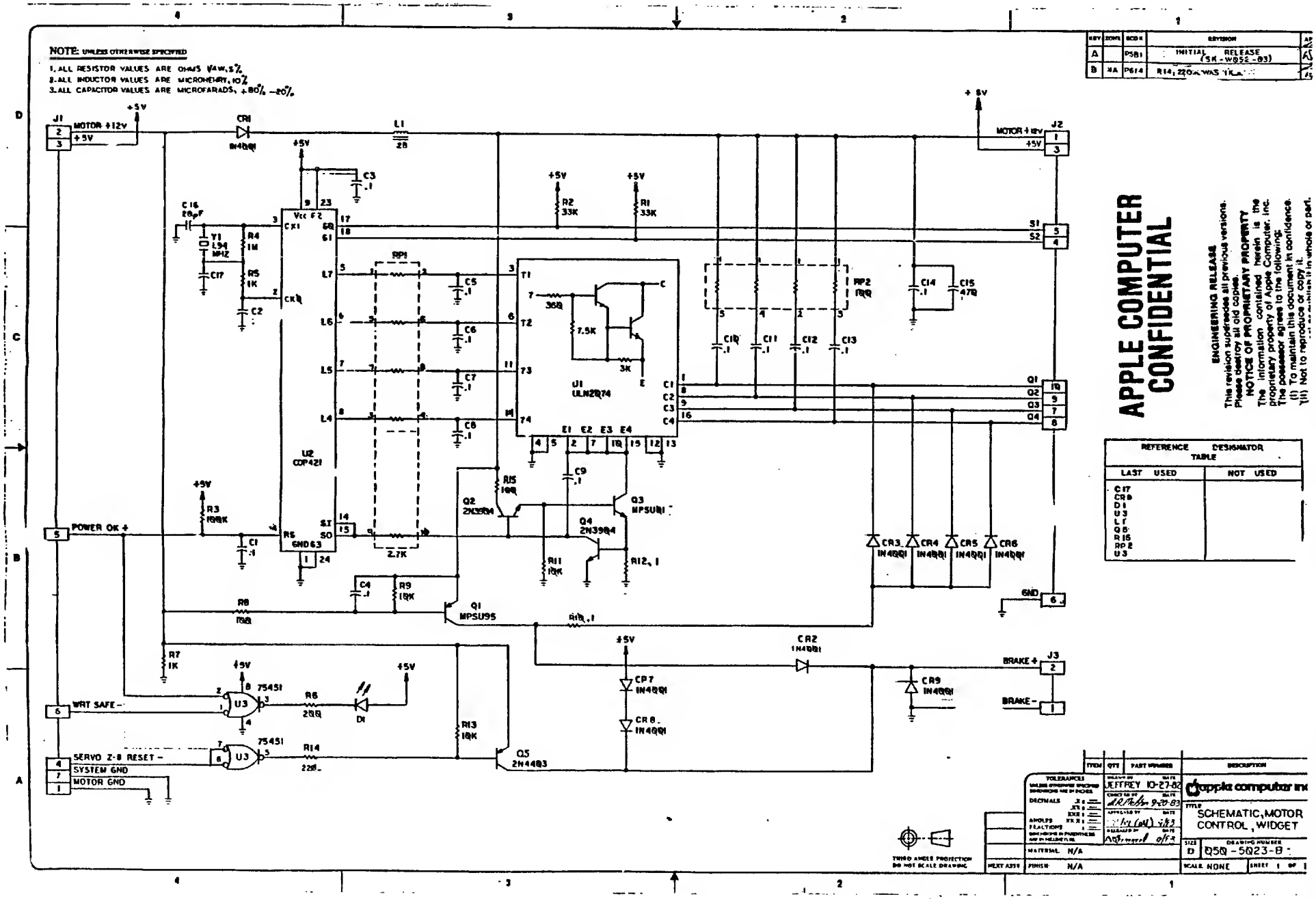
REFERENCE DESIGNATOR TABLE
LAST USED
NOT USED
C17
CR9
D1
U3
L1
Q5
R15
RP2
U3
C2
CR2
2. ADDED RPP
3. DELETED CR2
4. DELETED C2
JEFFREY 10-27-82
apple computer
SCHEMATIC, MOTOR CONTROL, WOZ
D
050-0021-C
MATERIAL N/A
FINISH N/A
NONE


NOTE: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTOR VALUES ARE OHMS ¼W, ±5%
2. ALL INDUCTOR VALUES ARE MICROHENRY, ±10%
3. ALL CAPACITOR VALUES ARE MICROFARADS, +80% -20%
REV | ZONE | ECO # | REVISION
A | | P581 | INITIAL RELEASE (5K-W052-03)
B | XA | P614 | R14, 220Ω WAS 1KΩ
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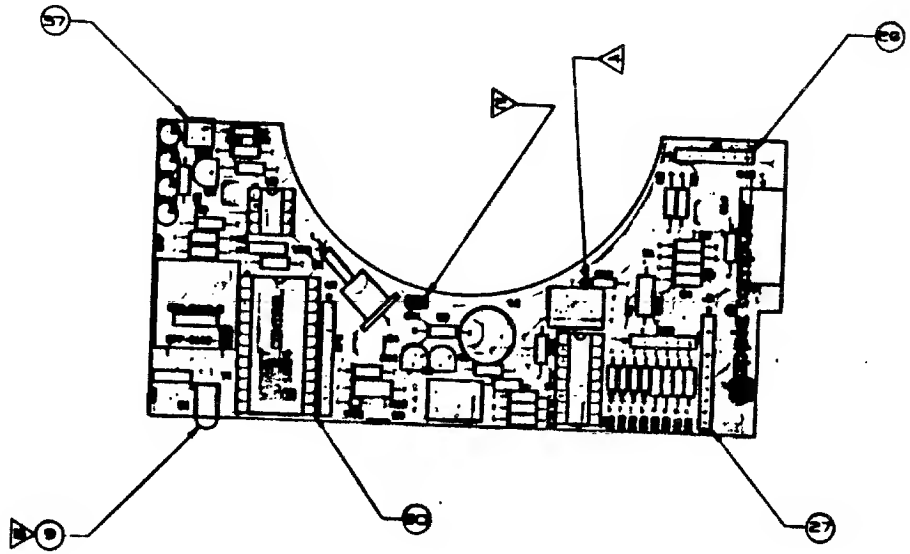
REFERENCE DESIGNATOR TABLE
LAST USED | NOT USED
C17
CR6
D1
U3
L1
Q6
R15
RP2
U3
J1 MOTOR +12V
+5V
POWER OK +
WRT SAFE -
SERVO Z-8 RESET -
SYSTEM GND
MOTOR GND
J2 MOTOR +12V
+5V
S1
S2
Q1
Q2
Q3
Q4
GND
J3 BRAKE +
BRAKE -
CR1 IN4001
CR2 IN4001
CR3 IN4001
CR4 IN4001
CR5 IN4001
CR6 IN4001
CR7 IN4001
CR8 IN4001
CR9 IN4001
L1 2B
Y1 1.94 MHZ
C16 20pF
C1 .1
C2
C3 .1
C4 .1
C5 .1
C6 .1
C7 .1
C8 .1
C9 .1
C10 .1
C11 .1
C12 .1
C13 .1
C14 .1
C15 470
R1 33K
R2 33K
R3 10K
R4 1M
R5 1K
R6 250
R7 1K
R8 150
R9 10K
R11 10K
R12, 1
R13 10K
R14 220
RP1 2.7K
RP2 10K
U1 ULN2074
U2 COP421
U3 75451
Q1 MPSU95
Q2 2N3904
Q3 MPSU81
Q4 2N3904
Q5 2N4403
D1
TOLERANCES
DECIMALS
ANGLES
FRACTIONS
MATERIAL N/A
FINISH N/A
NEXT ASSY
ITEM | QTY | PART NUMBER | DESCRIPTION
DRAWN BY JEFFREY 10-27-82
CHECKED BY DR Peterson 9-20-83
APPROVED BY
ENGINEER
apple computer inc
TITLE SCHEMATIC, MOTOR CONTROL, WIDGET
SIZE D
DRAWING NUMBER 050-5023-B
SCALE NONE
SHEET 1 OF 1
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

NOTE:

1. REFERENCE SCHEMATIC : 050-5025 .
2. STAMP DATE TESTED 6000 .
3. ITEM 9 (D1 GREENLED) IS MOUNTED ON NONCOMPONENT SIDE .
4. LEAVE CR2 COMPONENT DESIGNATED SPACE OPEN (NO PART ASSEMBLED).

D		P705	REDRAWN AND REVISED
	3C		ITEM 37 WAS ITEM 25
E		P787	ADDED ITEM 38 TO B.O.M
	4B		DELETED NOTE 3. NOTE 3 WAS 4 & NOTE 4 WAS 5.



SEE SEPARATE BILL OF MATERIAL : G77-0102

		apple computer inc
		TITLE ASSY , PCB, MOTOR CONTROL BOARD, WIDGET
		SIZE D — G77-0102-E
		SCALE 2X — SHEET 1 OF 1

```
 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                    **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0919
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 677-0103                    EFF: DATE        SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                E
 ITM COMPONENT        DESCRIPTION          MOD TYP FROM   THRU  Q QTY PER ASSY UOM X
 001 353-0311         IC, LM311             ME  D 090183 123199 N        1.000 EA
 002 353-0444         IC, LF444, 4 SECTI    ME  D 090183 123199 N        1.000 EA
 003 359-0290         IC, L290 TACHOMETE    ME  D 090183 123199 N        1.000 EA
 004 354-0074         IC, TL074, TESTED     ME  D 090183 123199 N        1.000 EA  Y
 005 372-3904         TRANSISTOR,NPN SW.    ME  D 090183 123199 N        1.000 EA
 006 372-3906         TRANSISTOR,PNP SW.    ME  D 090183 123199 N        1.000 EA
 007 371-4148         DIODE FAST SWITCH     ME  D 090183 123199 N        1.000 EA
 008 101-4101         RES 100 OHM 1/4W 5    ME  D 090183 123199 N        1.000 EA
 009 101-4181         RES 180 OHM 1/4W 5    ME  D 090183 123199 N        1.000 EA
 010 328-0115         IC,SSI 115,RD/WR C    ME  D 090183 123199 N        1.000 EA  Y
 011 101-4391         RES 390 OHM 1/4W 5    ME  D 090183 123199 N        1.000 EA
 013 101-4102         RES 1K OHM 1/4W 5%    ME  D 090183 123199 N        2.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700012 END OF LIST                    **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0919
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 677-0103                    EFF: DATE        SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                E
  M COMPONENT         DESCRIPTION          MOD TYP FROM   THRU  Q QTY PER ASSY UOM X
 014 327-0451         IC, 75451, PERF PO    ME  D 090183 123199 N        1.000 EA
 015 101-4272         RES 2.7K OHM 1/4W     ME  D 090183 123199 N        1.000 EA
 016 101-4472         RES 4.7K OHM 1/4W     ME  D 090183 123199 N        1.000 EA
 017 101-4562         RES 5.6K OHM 1/4W     ME  D 090183 123199 N        1.000 EA
 018 101-4751         RES 750 OHM 1/4W 5    ME  D 090183 123199 N        1.000 EA
 019 101-4103         RES 10K OHM 1/4W 5    ME  D 090183 123199 N        3.000 EA
 020 101-4243         RES 24K OHM 1/4W 5    ME  D 092983 123199 N        1.000 EA
 021 101-4104         RES 100K OHM 1/4W     ME  D 090183 123199 N        2.000 EA
 022 101-4434         RES 430K OHM 1/4W     ME  D 090183 123199 N        1.000 EA
 023 106-8252         RES 825 OHM 1/8W 1    ME  D 050784 123199 N        2.000 EA
 024 106-2004         RES 20.0K OHMS 1/8    ME  D 090183 123199 N        1.000 EA
 025 106-1623         RES, 162K OHMS, 1/    ME  D 090183 123199 N        1.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                           **

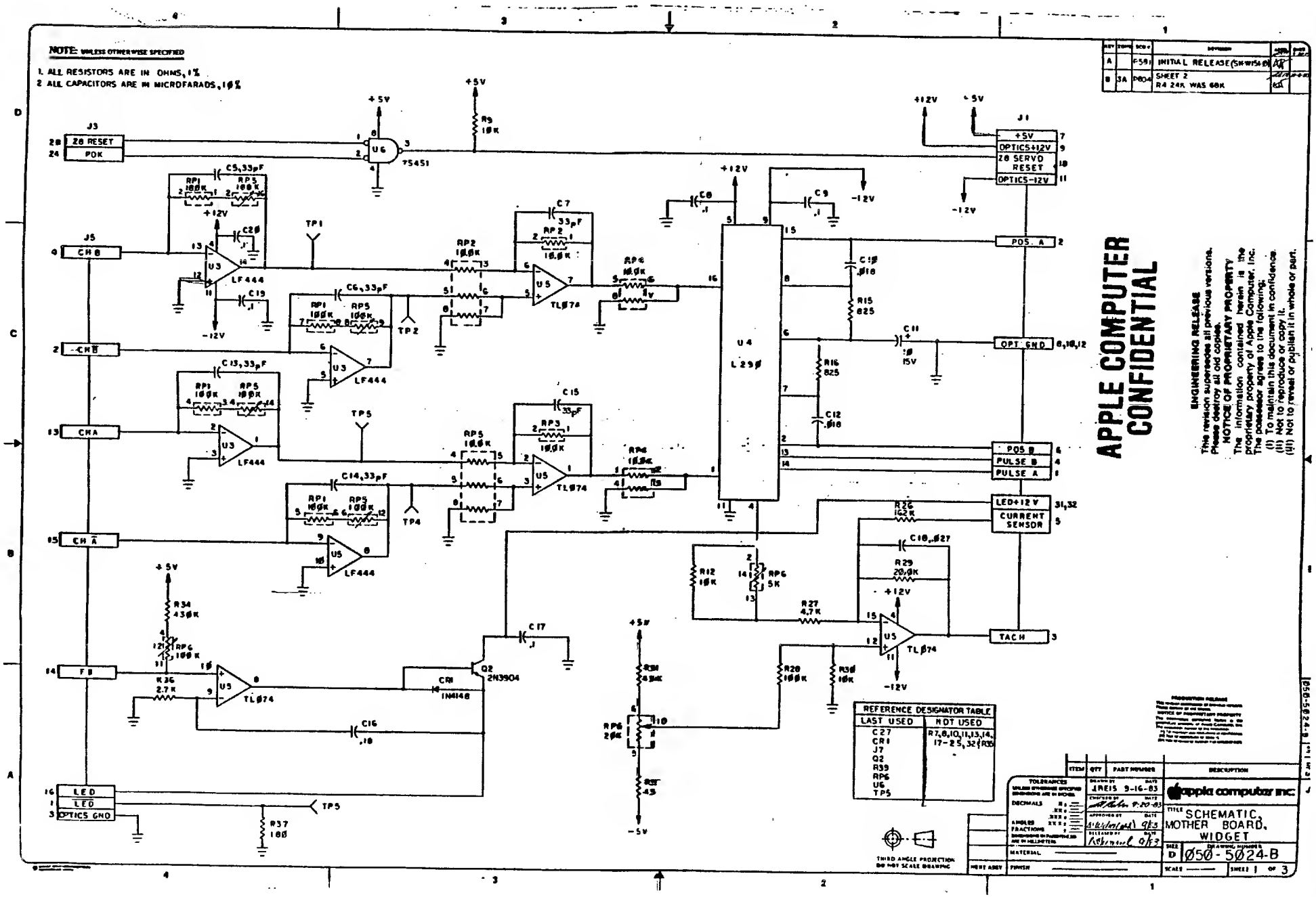
 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0920
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP
```

```
ASSY 677-0103                          EFF: DATE          SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT        DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
026 109-0610         RES VARIABLE 14 PI   ME  D 090183 123199 N        1.000 EA
 27 109-0620         RES VARIABLE 16 PI   ME  D 090183 123199 N        1.000 EA
 28 112-0012         RES NETWORK 4 X 10   ME  D 090183 123199 N        1.000 EA
029 112-0011         RES NETWORK 4 X 10   ME  D 090183 123199 N        1.000 EA
030 130-0127         CAP CER AXIAL 1000   ME  D 090183 123199 N        3.000 EA
031 130-0007         CAP CER AXIAL .1 U   ME  D 090183 123199 N        2.000 EA
032 130-0221         CAP CER .18 uF 10%   ME  D 090183 123199 N        9.000 EA
033 134-5601         CAP CER 33 pF 10%    ME  D 090183 123199 N        1.000 EA
034 120-0023         CAP POLYCARB .018    ME  D 090183 123199 N        6.000 EA
035 120-0018         CAP POLYCARB .027    ME  D 090183 123199 N        2.000 EA
036 127-0107         CAP TANT 10 uF 10%   ME  D 090183 123199 N        1.000 EA
037 515-0208         CONN,HDR,STR,LKG,5   ME  D 090183 123199 N        1.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0920
EXPLOD1                PART COMPONENTS EXPL INQ - 1          01PMH          STEP

ASSY 677-0103                          EFF: DATE          SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT        DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
038 515-0508         CONN,HDR,RT ANG,7P   ME  D 090183 123199 N        1.000 EA
039 513-0106         CONN,CD EDG,PC TAI   ME  D 090183 123199 N        2.000 EA
 40 515-0005         CONN,PIN,SINGLE      ME  D 090183 123199 N        5.000 EA
 42 511-1601         SOCKET, IC 16 PIN    ME  D 090183 123199 N        1.000 EA
 43 511-0801         SOCKET, IC 8 PIN     ME  D 090183 123199 N        1.000 EA
044 820-5013         PCB,MOTHER BD,WIDG   ME  D 102083 123199 N        1.000 EA
046 101-4433         RES 43K OHM 1/4W 5   ME  D 090183 123199 N        2.000 EA
047 101-4683         RES 68K OHM 1/4W 5   ME  D 090183 092883 N        0.000 EA
048 120-0022         CAP POLYCARB .018    ME  D 092983 123199 N        0.000 EA
049 120-0025         CAP POLYCARB .027    ME  D 092983 123199 N        0.000 EA
050 517-1440         SOCKET,PIN,TERMINA   ME  D 050784 123199 N        0.125 EA
999 050-5024         SCHEMATIC,MOTHER B   ME  D 092983 123199 N        0.000 EA
EXPLOSION LEVEL :    1
```


NOTE: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTORS ARE IN OHMS, 1%
2. ALL CAPACITORS ARE IN MICROFARADS, 10%
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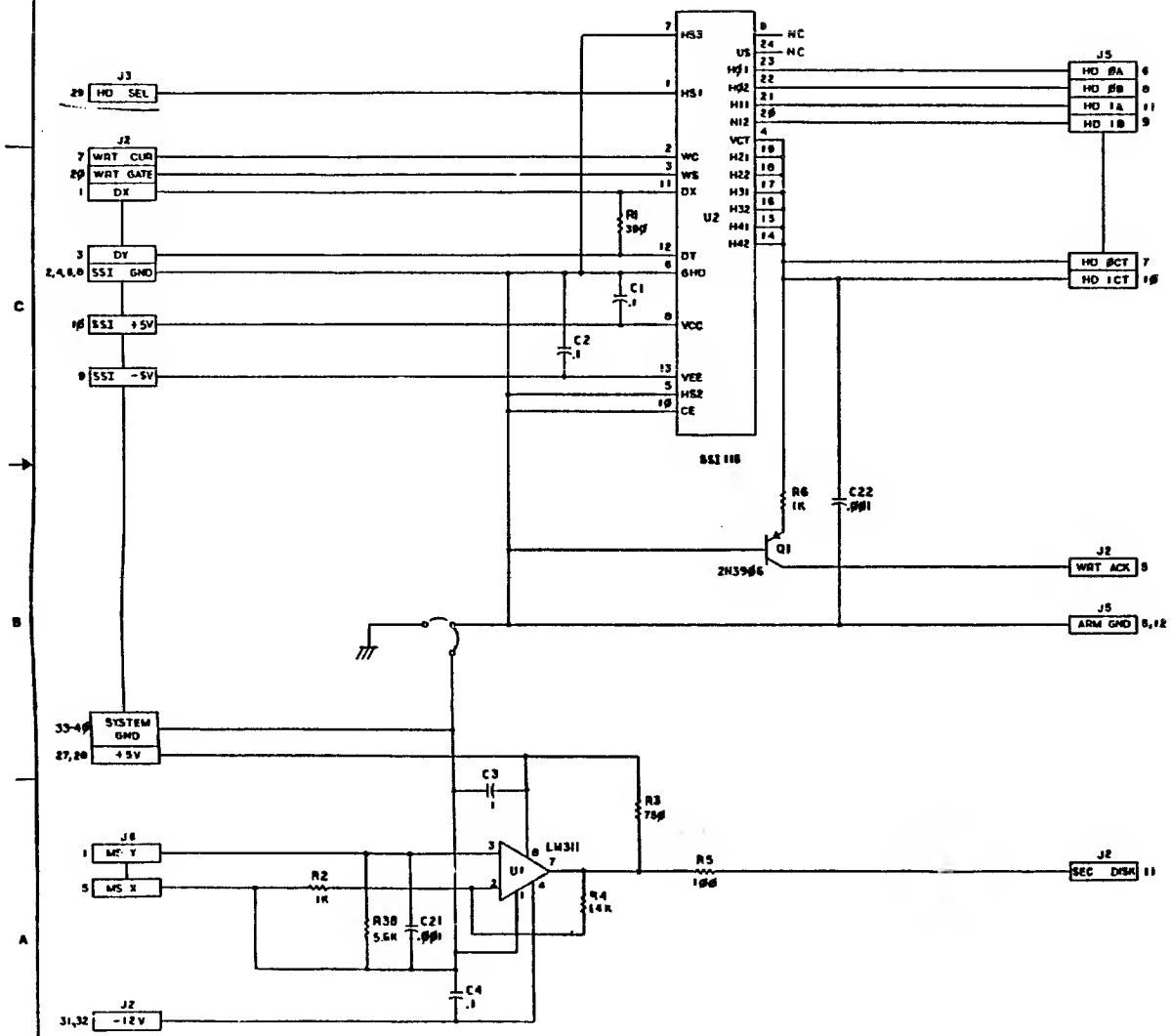
REFERENCE DESIGNATOR TABLE
LAST USED
NOT USED
C27
CR1
J7
Q2
R39
RP6
U6
TP5
R7,8,10,11,13,14,17-25,32,R36
THIRD ANGLE PROJECTION DO NOT SCALE DRAWING
apple computer inc.
TITLE SCHEMATIC, MOTHER BOARD, WIDGET
SIZE D
Ø50-5Ø24-B
SHEET 1 OF 3

NOTE: UNLESS OTHERWISE SPECIFIED

REV	ECO #	REVISION
		SEE SHEET 1 OF 3



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THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DECIMALS .X ± .XX ± .XXX ±
ANGLES XX.X ±
FRACTIONS ±
DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS

DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
RELEASED BY DATE

MATERIAL N/A
NEXT ASSY FINISH N/A

apple comp

TITLE SCHEMAT
MOTHER BOA
WIDGE

SIZE D | DRAWING NO. Ø5Ø-502
SCALE NONE | REV

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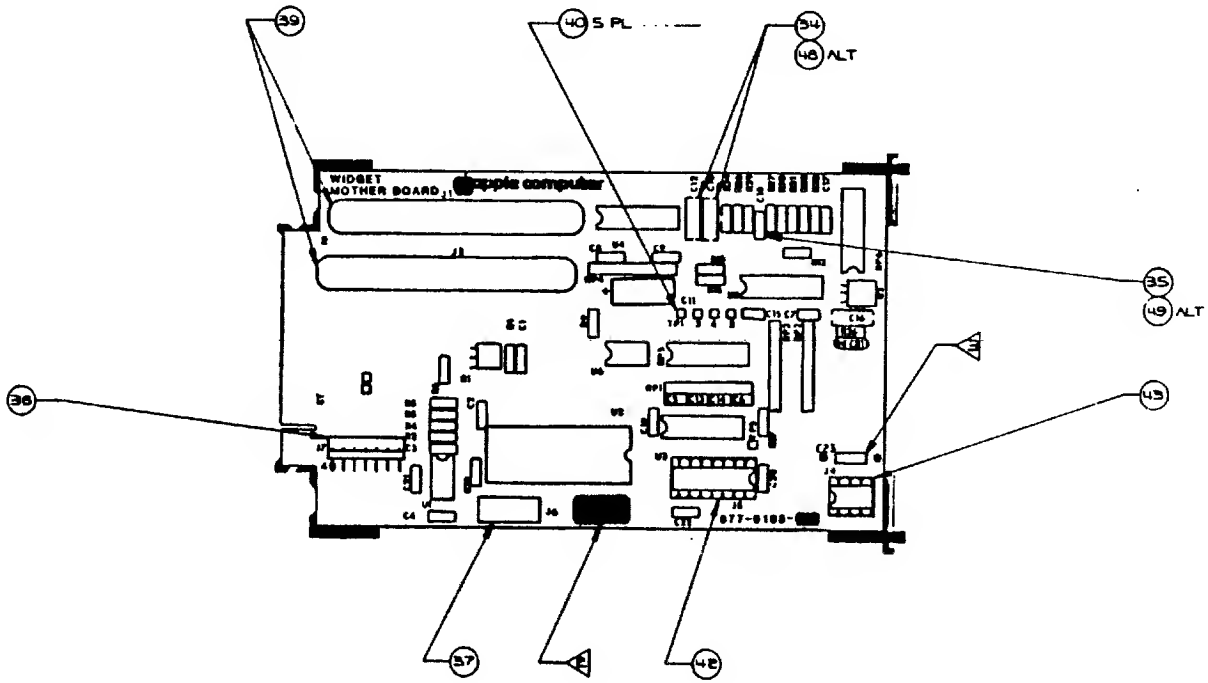
apple computer
SCHEMATIC, MOTHER BOARD, WIDGET
050-5024-B
SEE SHT 1 OF 3
OPTICS PRE-PROCESSOR
REF SHEET 1 OF 3
HEAD PRE-AMP/ DRIVER, SECTOR DSK DETECTOR
REF SHEET 2 OF 3
NOTE: UNLESS OTHERWISE SPECIFIED

NOTE: UNLESS OTHERWISE SPECIFIED

1. REFERENCE SCHEMATIC : 060-5024 .
2. STAMP DATE TESTED GOOD .
3. NO CAPACITOR REQUIRED FOR C23 LEAVE EMPTY (DO NOT LOAD).



SEE SEPARATE BILL OF MATERIAL: 677-

ITEM	QTY	PART NUMBER	DESCRIPTION

apple computer

ASSY PCB UNTETH
MOTHER BOARD

SIZE B | 677-0103

SCALE 2/1

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0921
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0104 EFF: DATE SER NO LOT NO
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM	COMPONENT	ABBREVIATED DESCRIPTION	MOD	TYP	--EFFECTIVITY-- FROM	THRU	F Q	QTY PER ASSY	UOM	E X
001	351-3127	TRANSISTOR,ARRAY N	ME	D	101083	123199	N	3.000	EA	
002	351-3146	IC, 3146 HI VOLT.	ME	D	101083	123199	N	2.000	EA	
004	351-6700	IC, TRANS. ARRAY Q	ME	D	101083	123199	N	2.000	EA	
005	353-0592	IC, VIDEO AMPLIFIE	ME	D	101083	123199	N	1.000	EA	
006	353-0353	DUAL FET OP AMP/BU	ME	D	101083	123199	N	5.000	EA	
007	353-0319	IC, HIGH SPEED DUA	ME	D	101083	123199	N	1.000	EA	
008	353-1350	IC, 1350, IF AMP	ME	D	101083	123199	N	1.000	EA	
009	327-0452	IC,75452,DUAL PERF	ME	D	101083	123199	N	1.000	EA	
010	315-0820	IC,TTL,8T20,BI-DIR	ME	D	101083	123199	N	1.000	EA	
011	329-0002	IC,96LS02,DUAL RET	ME	D	101083	052084	N	0.000	EA	
012	305-0074	IC, 74LS74	ME	D	101083	123199	N	1.000	EA	
013	305-0628	IC, 74LS628	ME	D	101083	123199	N	1.000	EA	

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :
DC700011 MORE **

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0922
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0104 EFF: DATE SER NO LOT NO
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM	COMPONENT	ABBREVIATED DESCRIPTION	MOD	TYP	--EFFECTIVITY-- FROM	THRU	F Q	QTY PER ASSY	UOM	E X
014	341-0263	IC, LSI READ/WRITE	ME	D	101083	123199	N	1.000	EA	
015	353-0004	IC,79L05AC VOLTAGE	ME	D	101083	123199	N	2.000	EA	
016	372-3904	TRANSISTOR,NPN SW.	ME	D	101083	113083	N	0.000	EA	
017	372-5555	TRANSISTOR,N-CHANN	ME	D	101083	123199	N	1.000	EA	
018	371-0914	DIODE FAST SWITCH	ME	D	101083	113083	N	0.000	EA	
019	101-4027	RES 2.7 OHM 1/4W 5	ME	D	101083	123199	N	3.000	EA	
020	101-4390	RES 39 OHM 1/4W 5%	ME	D	101083	123199	N	8.000	EA	
021	101-4101	RES 100 OHM 1/4W 5	ME	D	101083	123199	N	1.000	EA	
022	101-4151	RES 150 OHM 1/4W 5	ME	D	101083	123199	N	2.000	EA	
023	101-4241	RES 240 OHM 1/4W 5	ME	D	101083	123199	N	1.000	EA	
024	108-2672	RES 267 OHM 1/4W 1	ME	D	101083	123199	N	2.000	EA	
025	101-4391	RES 390 OHM 1/4W 5	ME	D	101083	123199	N	9.000	EA	

EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :
DC700011 MORE **

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0924
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0924
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0104                      EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                    ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT       DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
027 101-4511        RES 510 OHM 1/4W 5 ME  D 101083 123199 N        3.000 EA
028 101-4561        RES 560 OHM 1/4W 5 ME  D 101083 123199 N        1.000 EA
029 101-4621        RES 620 OHM 1/4W 5 ME  D 101083 123199 N        1.000 EA
030 101-4751        RES 750 OHM 1/4W 5 ME  D 101083 123199 N        4.000 EA
031 101-4102        RES 1K OHM 1/4W 5% ME  D 120183 123199 N        8.000 EA
032 101-4152        RES 1.5K OHM 1/4W  ME  D 101083 123199 N        4.000 EA
033 101-4202        RES 2K OHM 1/4W 5% ME  D 101083 123199 N        9.000 EA
034 101-4272        RES 2.7K OHM 1/4W  ME  D 101083 123199 N        1.000 EA
035 101-4332        RES 3.3K OHM 1/4W  ME  D 101083 123199 N        4.000 EA
036 101-4392        RES 3.9K OHM 1/4W  ME  D 101083 123199 N        3.000 EA
037 101-4472        RES 4.7K OHM 1/4W  ME  D 120183 123199 N        2.000 EA
EXPLOSION LEVEL :   1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                      **
ASSY 677-0104                      EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                    ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT       DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
038 101-4103        RES 10K OHM 1/4W 5 ME  D 120183 123199 N        9.000 EA
039 101-4123        RES 12K OHM 1/4W 5 ME  D 101083 113083 N        0.000 EA
040 101-4243        RES 24K OHM 1/4W 5 ME  D 101083 123199 N        1.000 EA
041 108-1001        RES 10 OHM 1/4W 1% ME  D 101083 123199 N        1.000 EA
 42 101-4563        RES 56K OHM 1/4W 5 ME  D 101083 123199 N        1.000 EA
  3 101-4753        RES 75K OHM 1/4W 5 ME  D 101083 123199 N        2.000 EA
044 101-4104        RES 100K OHM 1/4W  ME  D 101083 121483 N        0.000 EA
045 101-4164        RES 160K OHM 1/4W  ME  D 101083 123199 N        1.000 EA
047 101-4474        RES 470K OHM 1/4W  ME  D 101083 113083 N        0.000 EA
048 108-1003        RES 1K OHM 1/4W 1% ME  D 120183 123199 N        4.000 EA
050 108-3923        RES 3.92K OHM 1/4W ME  D 101083 123199 N        2.000 EA
051 108-1214        RES 12.1K OHM 1/4W ME  D 101083 123199 N        4.000 EA
EXPLOSION LEVEL :   1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                      **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0925
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0104                      EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                    ABBREVIATED                --EFFECTIVITY-- F                    E
ITM COMPONENT       DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
052 108-2434        RES 24.3K OHM 1/4W ME  D 101083 123199 N        5.000 EA
053 108-6814        RES 68.1K OHM 1/4W ME  D 101083 123199 N        2.000 EA
054 137-5301        CAP DIP MICA 15 pF ME  D 101083 123199 N        2.000 EA
055 109-0422        POT, 1 TURN .250 D ME  D 101083 123199 N        1.000 EA
056 130-0119        CAP CER AXIAL 12 P ME  D 120183 123199 N        1.000 EA
057 130-0120        CAP CER AXIAL 22 P ME  D 101083 123199 N        1.000 EA
058 130-0121        CAP CER AXIAL 47 P ME  D 101083 123199 N        1.000 EA
059 130-0122        CAP CER AXIAL 100  ME  D 101083 123199 N        7.000 EA
062 130-0125        CAP CER AXIAL 470  ME  D 101083 123199 N        2.000 EA
063 130-0126        CAP CER AXIAL 510  ME  D 120183 123199 N        5.000 EA
064 130-0218        CAP CER.0022 UF 10 ME  D 101083 123199 N        5.000 EA
066 130-0220        CAP CER .022 uF 10 ME  D 101083 123199 N        1.000 EA
EXPLOSION LEVEL :   1
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```
DC700011 MORE                                    **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0926
EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STEP

ASSY 677-0104                      EFF: DATE          SER NO          LOT NO
 .T      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                  E
.TM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
067 130-0007         CAP CER AXIAL .1 U ME  D 101083 123199 N        39.000 EA
068 151-5401         INDUCTOR, 18 uH 10 ME  D 101083 123199 N         4.000 EA
069 197-0017         CRYSTAL, 10MHz     ME  D 101083 123199 N         1.000 EA
070 156-0113         DELAY LINE, 80 NS, ME  D 101083 123199 N         1.000 EA
071 515-0005         CONN,PIN,SINGLE    ME  D 101083 123199 N        10.000 EA
072 108-1004         RES 10.0K OHM 1/4W ME  D 120183 123199 N         3.000 EA
073 106-2103         RES 2.10K OHMS 1/8 ME  D 101083 113083 N         0.000 EA
074 511-0801         SOCKET, IC 8 PIN   ME  D 101083 041584 N         0.000 EA
075 511-1401         SOCKET, IC 14 PIN  ME  D 101083 123199 N         1.000 EA
076 511-1601         SOCKET, IC 16 PIN  ME  D 101083 041584 N         0.000 EA
077 511-4001         SOCKET, IC 40 PIN  ME  D 101083 123199 N         1.000 EA
078 820-5017         PCB.,R/W BD.WIDGET ME  D 110183 123199 N         1.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                                    **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0927
EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STE

ASSY 677-0104                      EFF: DATE          SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F
ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM
079 101-4153         RES 15K OHM 1/4W 5 ME  D 101083 123199 N         1.000 EA
080 101-4394         RES 390K OHM 1/4W  ME  D 101083 123199 N         2.000 EA
081 130-0128         CAP CER AXIAL 150  ME  D 101083 123199 N         1.000 EA
082 108-1503         RES 1.5K OHM 1/4W  ME  D 120183 123199 N         2.000 EA
083 108-1823         RES 1.82K OHM 1/4W ME  D 101083 113083 N         0.000 EA
084 108-2003         RES 2K OHM 1/4W 1% ME  D 120183 123199 N         2.000 EA
085 108-3013         RES 3.01K OHM 1/4W ME  D 120183 123199 N         4.000 EA
086 111-0002         RES NETWORK 7 X 3. ME  D 101083 123199 N         3.000 EA
087 112-0014         RES NETWORK 4 X 15 ME  D 101083 123199 N         2.000 EA
088 112-0011         RES NETWORK 4 X 10 ME  D 101083 123199 N         1.000 EA
089 137-5201         CAP DIP MICA 12 pF ME  D 120183 123199 N         1.000 EA
092 137-6402         CAP DIP MICA 200 p ME  D 101083 123199 N         2.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                                    **
```

NEXT RESPONSE : EXPLOD1 NEXT KEY :
DC700011 MORE **

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0928
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

SSY 677-0104 EFF: DATE SER NO LOT NO
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM	COMPONENT	ABBREVIATED DESCRIPTION	MOD	--EFFECTIVITY-- TYP	FROM	THRU	F Q	QTY PER ASSY	UOM	E X
093	101-4393	RES 39K OHM 1/4W 5	ME	D	101083	123199	N	1.000	EA	
095	137-5803	CAP DIP MICA 62 pF	ME	D	101083	123199	N	1.000	EA	
096	130-0012	CAP CER AXIAL .015	ME	D	120183	123199	N	2.000	EA	
097	130-0129	CAP CER AXIAL 8.2	ME	D	101083	123199	N	1.000	EA	
098	101-4620	RES 62 OHM 1/4W 5%	ME	D	101083	123199	N	2.000	EA	
099	371-4148	DIODE FAST SWITCH	ME	D	120183	123199	N	6.000	EA	
100	101-4562	RES 5.6K OHM 1/4W	ME	D	120183	123199	N	1.000	EA	
101	101-4274	RES 270K OHM 1/4W	ME	D	120183	123199	N	1.000	EA	
102	130-0219	CAP CER .01 uF 10%	ME	D	120183	123199	N	2.000	EA	
103	108-2103	RES 2.10K OHM 1/4W	ME	D	120183	043084	N	0.000	EA	
104	130-0222	CAP CER .001 UF 10	ME	D	120183	043084	N	0.000	EA	
105	108-4753	RES 4.75K OHM 1/4W	ME	D	020184	123199	N	1.000	EA	

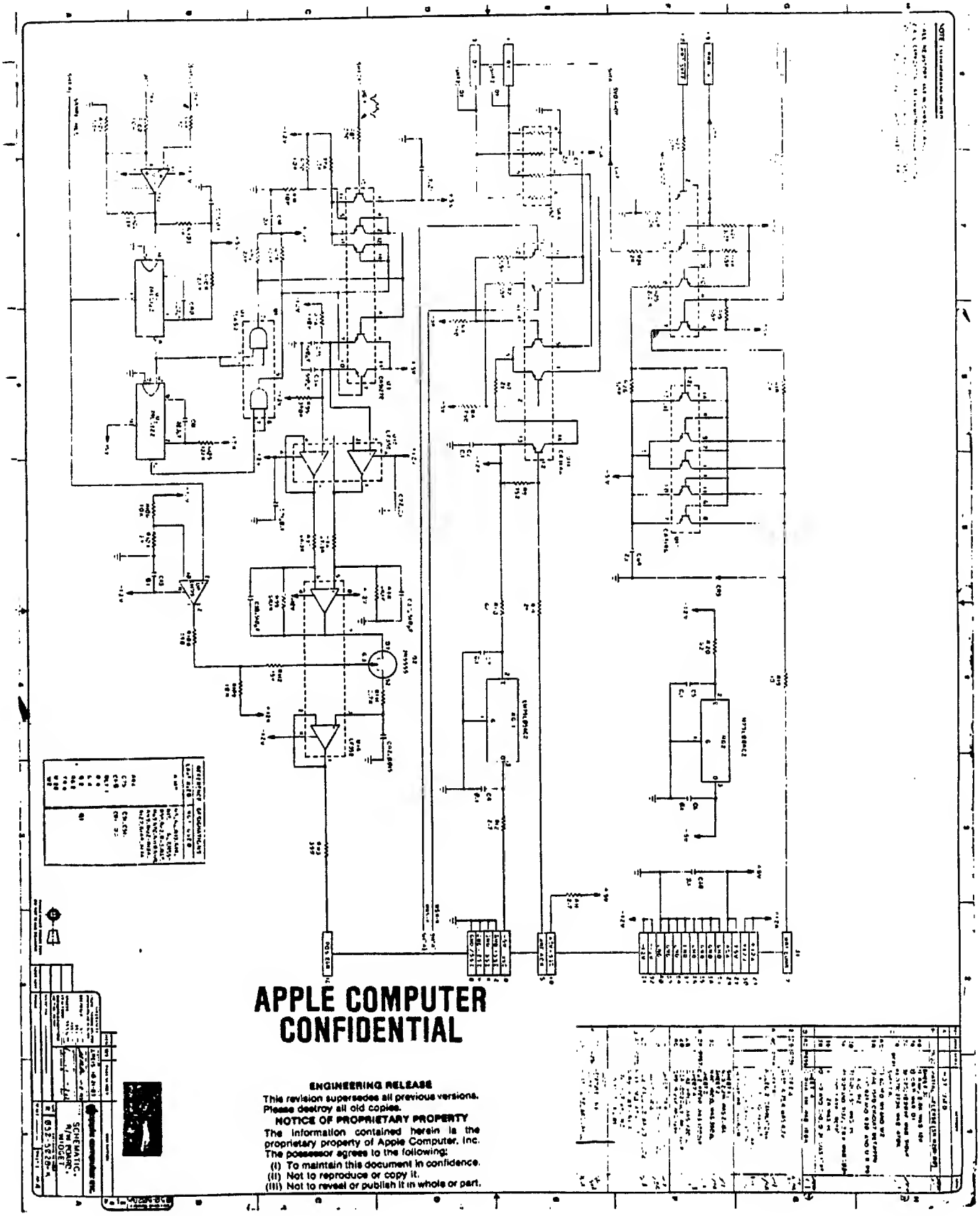
EXPLOSION LEVEL : 1

NEXT RESPONSE : EXPLOD1 NEXT KEY :
DC700011 MORE **

ABMDISP1 CULLINET MANUFACTURING SYSTEM - GAMMA 1.1 08/15/85 0929
EXPLOD1 PART COMPONENTS EXPL INQ - 1 01PMH STEP

ASSY 677-0104 EFF: DATE SER NO LOT NO
PLT MODEL SEQ(I,C) I SKIP TO ITEM/COMPONENT

ITM	COMPONENT	ABBREVIATED DESCRIPTION	MOD	--EFFECTIVITY-- TYP	FROM	THRU	F Q	QTY PER ASSY	UOM	E X
106	101-4105	RES 1M OHM 1/4W 5%	ME	D	121583	123199	N	1.000	EA	
107	108-4703	RES 4.70K OHM 1/4W	ME	D	010101	041584	N	0.000	EA	
108	108-6812	RES 681 OHM 1/4W 1	ME	D	050184	062484	N	0.000	EA	
109	101-4181	RES 180 OHM 1/4W 5	ME	D	050184	123199	N	1.000	EA	
110	108-2213	RES 2.21K OHM 1/4W	ME	D	050184	123199	N	1.000	EA	
111	305-0123	IC,74LS123	ME	D	052184	123199	N	2.000	EA	
999	050-5028	SCHEMATIC,R/W BD.,	ME	D	121583	123199	N	0.000	EA	



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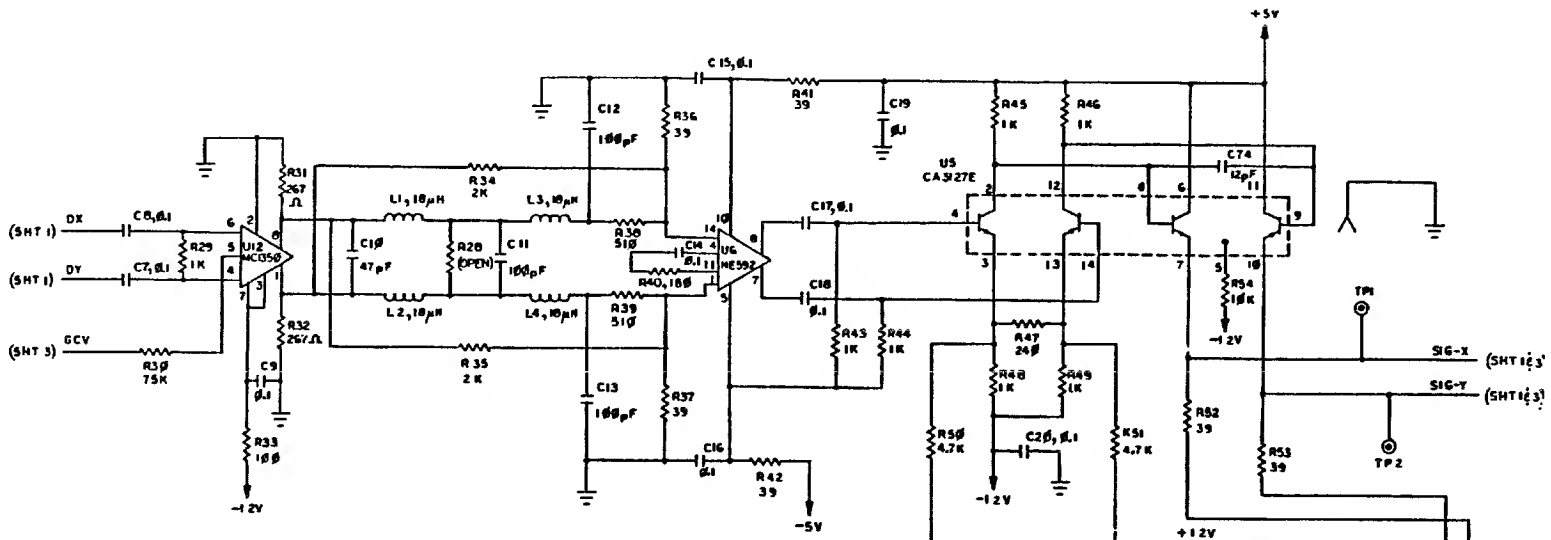

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ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES: DECIMALS XX ±, XXX ±; ANGLES ±; FRACTIONS ±

DRAWN BY J.REIS 10-26-83
CHECKED BY 11-8-83
ENGINEER BY DATE
APPROVED BY DATE
MATERIAL
NEXT ASSY
FINISH

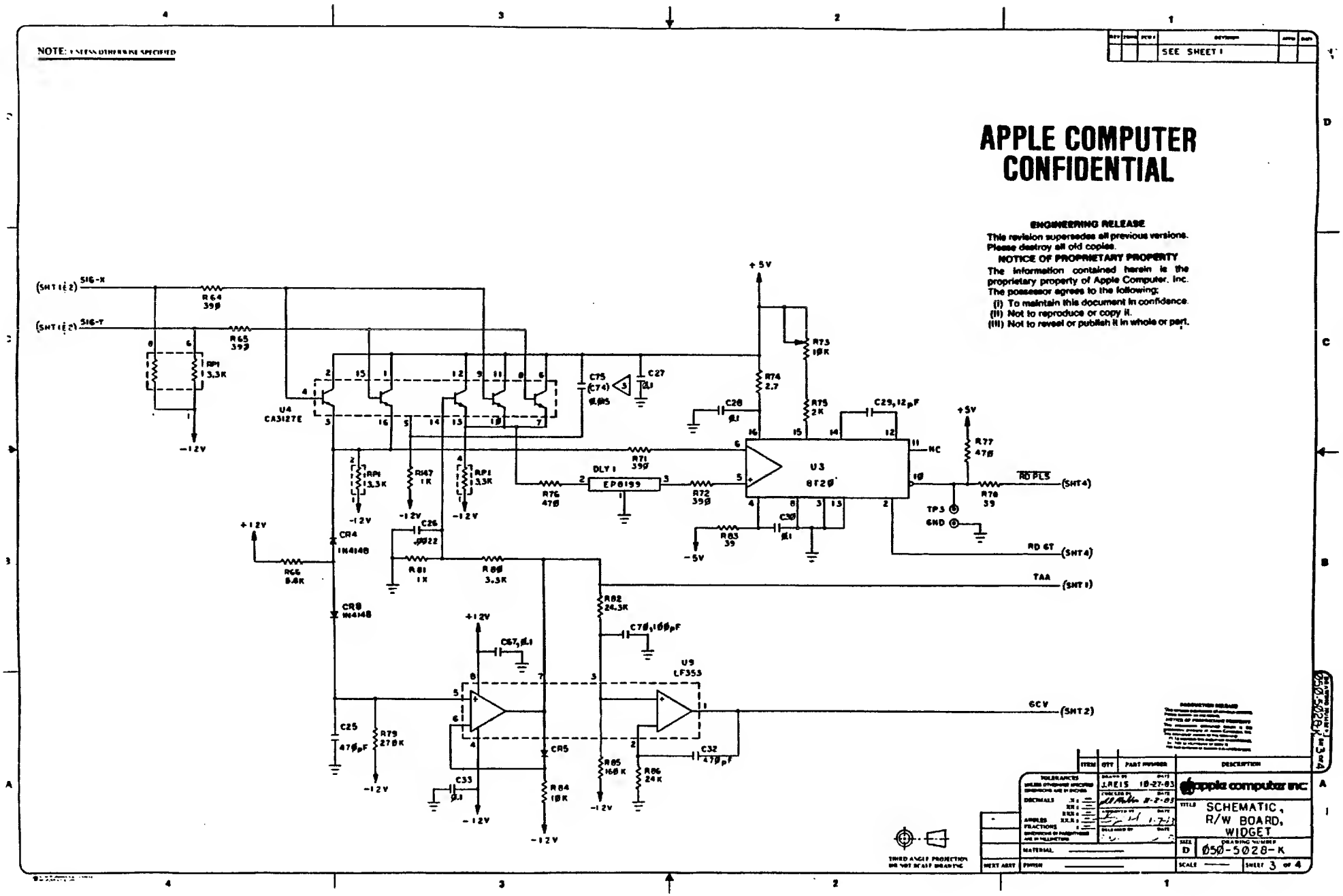
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

apple computer inc

TITLE: SCHEMATIC, R/W BOARD, WIDGET

SIZE D | DRAWING NUMBER 050-5028-K

SCALE | SHEET 2 OF 4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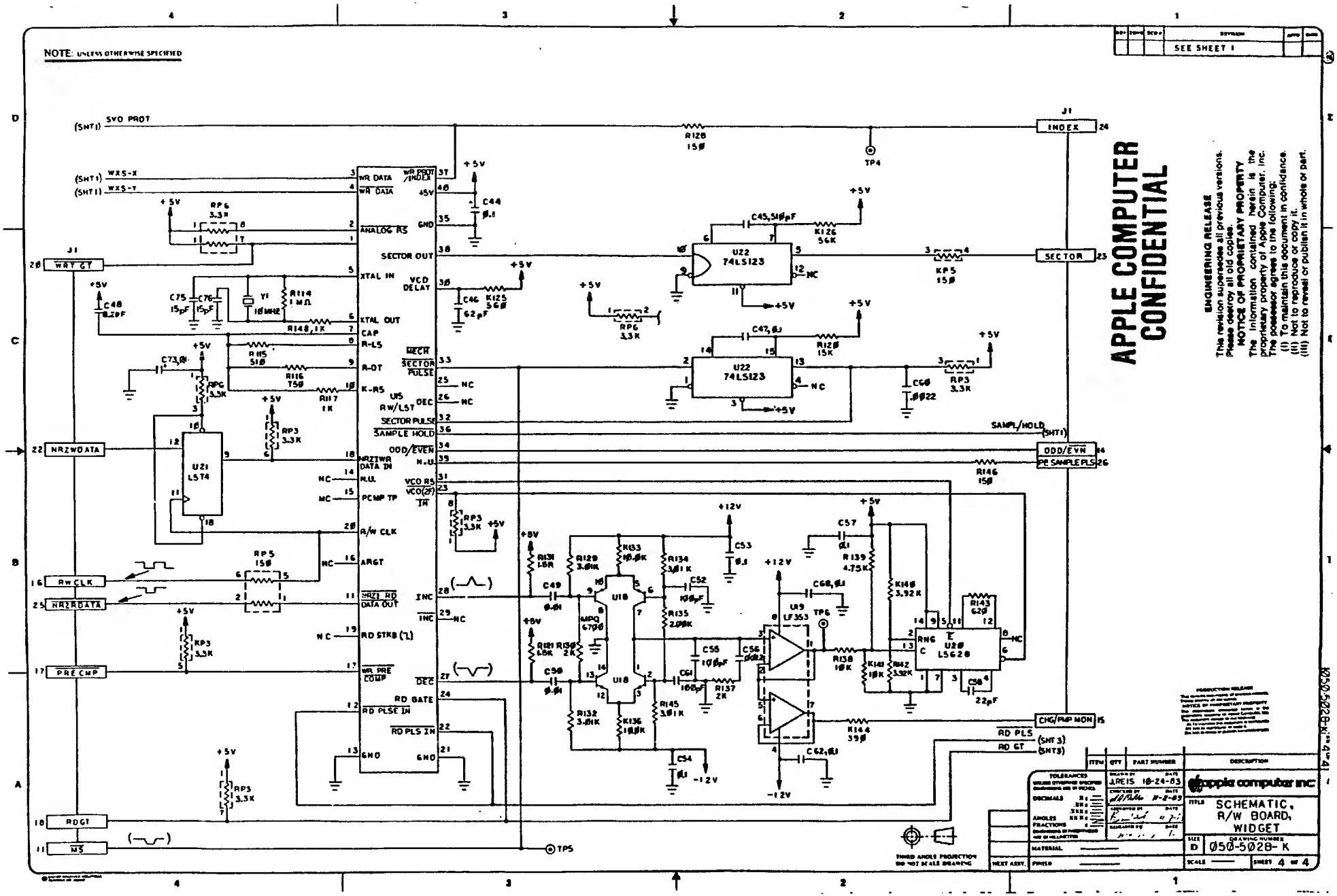
SIG-X
SIG-Y
R64 39Ø
R65 39Ø
RP1 3.3K
-12V
+5V
U4 CA3127E
C75 (C74) .Ø05
C27 .1
C28 .1
R73 1ØK
R74 2.7
R75 2K
C29, 12pF
R77 47Ø
R71 39Ø
DLY 1 EP8199
R76 47Ø
R72 39Ø
U3 8T2Ø
NC
RD PLS (SHT 4)
R78 39
TP3
GND
R83 39
C30 .1
-5V
RD GT (SHT 4)
TAA (SHT 1)
+12V
CR4 1N4148
C26 .ØØ22
R66 8.8K
R81 1K
R80 3.3K
RP1 3.3K
R147 1K
CR8 1N4148
R82 24.3K
C78, 100pF
C67, .1
U9 LF353
GCV (SHT 2)
C25 470pF
R79 270K
CR5
R84 1ØK
R85 160K
R86 24K
C32 470pF
C33 .1
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
ITEM QTY PART NUMBER DESCRIPTION
TOLERANCES
DECIMALS
ANGLES
FRACTIONS
MATERIAL
NEXT ASSY
J.REIS 10-27-83
apple computer inc
TITLE SCHEMATIC, R/W BOARD, WIDGET
SIZE D
DRAWING NUMBER 050-5028-K
SCALE
SHEET 3 OF 4
050-5028-K, SH 3 of 4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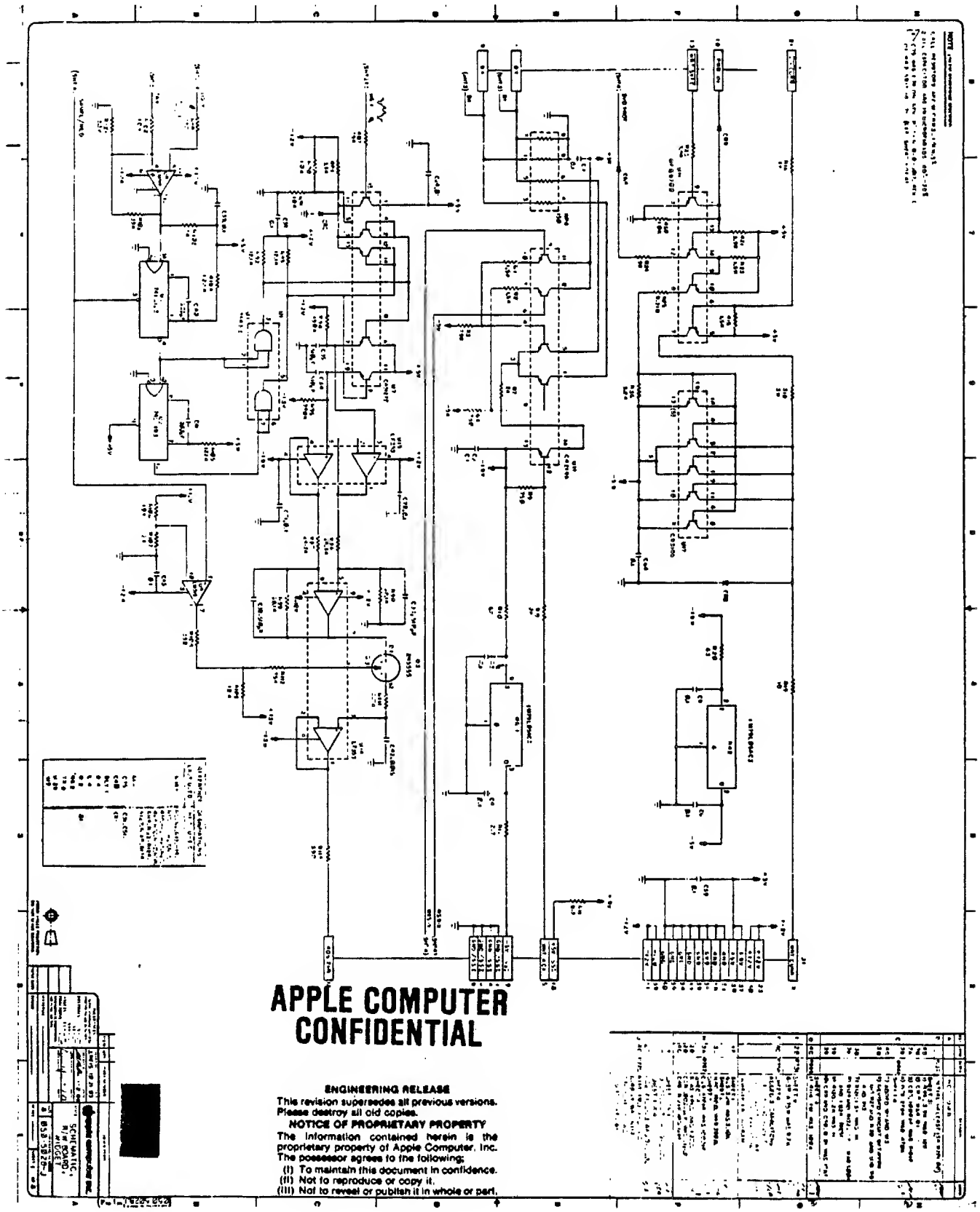
(SHT1) SVO PROT
(SHT1) WXS-X
(SHT1) WXS-Y
WRT GT
NRZWDATA
RW CLK
NRZRDATA
PRE CMP
RDGT
MS
WR DATA
WR PROT /INDEX
ANALOG RS
SECTOR OUT
XTAL IN
VCO DELAY
XTAL OUT
CAP
R-LS
R-OT
K-RS
MECH SECTOR PULSE
R/W/LST
DEC
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
N.U.
VCO RS
VCO(2F) IN
R/W CLK
ARGT
NRZI RD DATA OUT
INC
WR PRE COMP
RD GATE
RD PLSE IN
RD PLS IN
GND
INDEX
SECTOR
ODD/EVN
PE SAMPLE PLS
CHG/PMP MON
SAMPL/HOLD (SHT1)
RD PLS (SHT3)
RD GT (SHT3)
TP4
TP5
TP6
U21 LS74
U22 74LS123
U18 MPQ6700
U19 LF353
U20 LS620
+5V
+12V
-12V
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc
SCHEMATIC, R/W BOARD, WIDGET
DRAWING NUMBER 050-5028-K
SIZE D
SHEET 4 of 4
J.REIS 10-24-83



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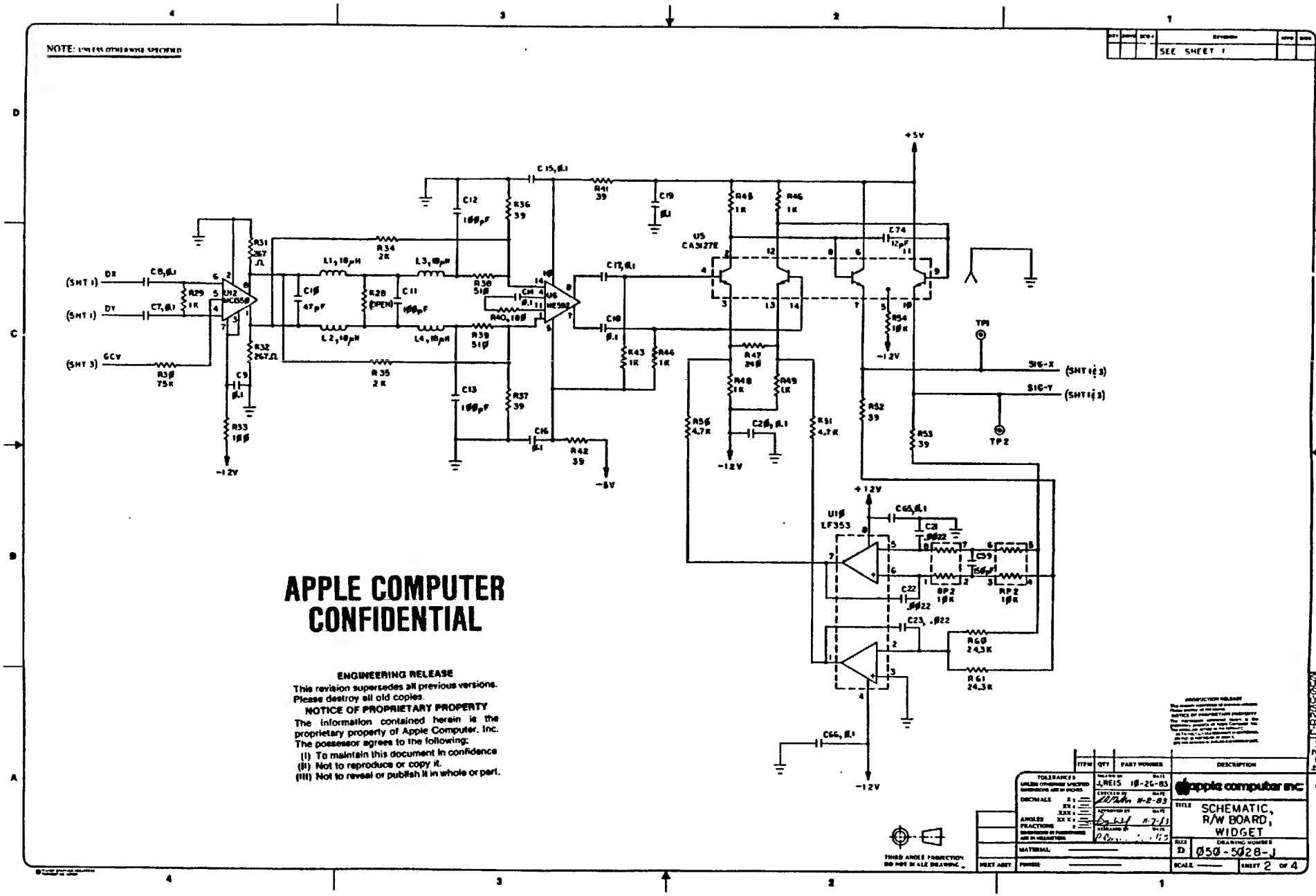
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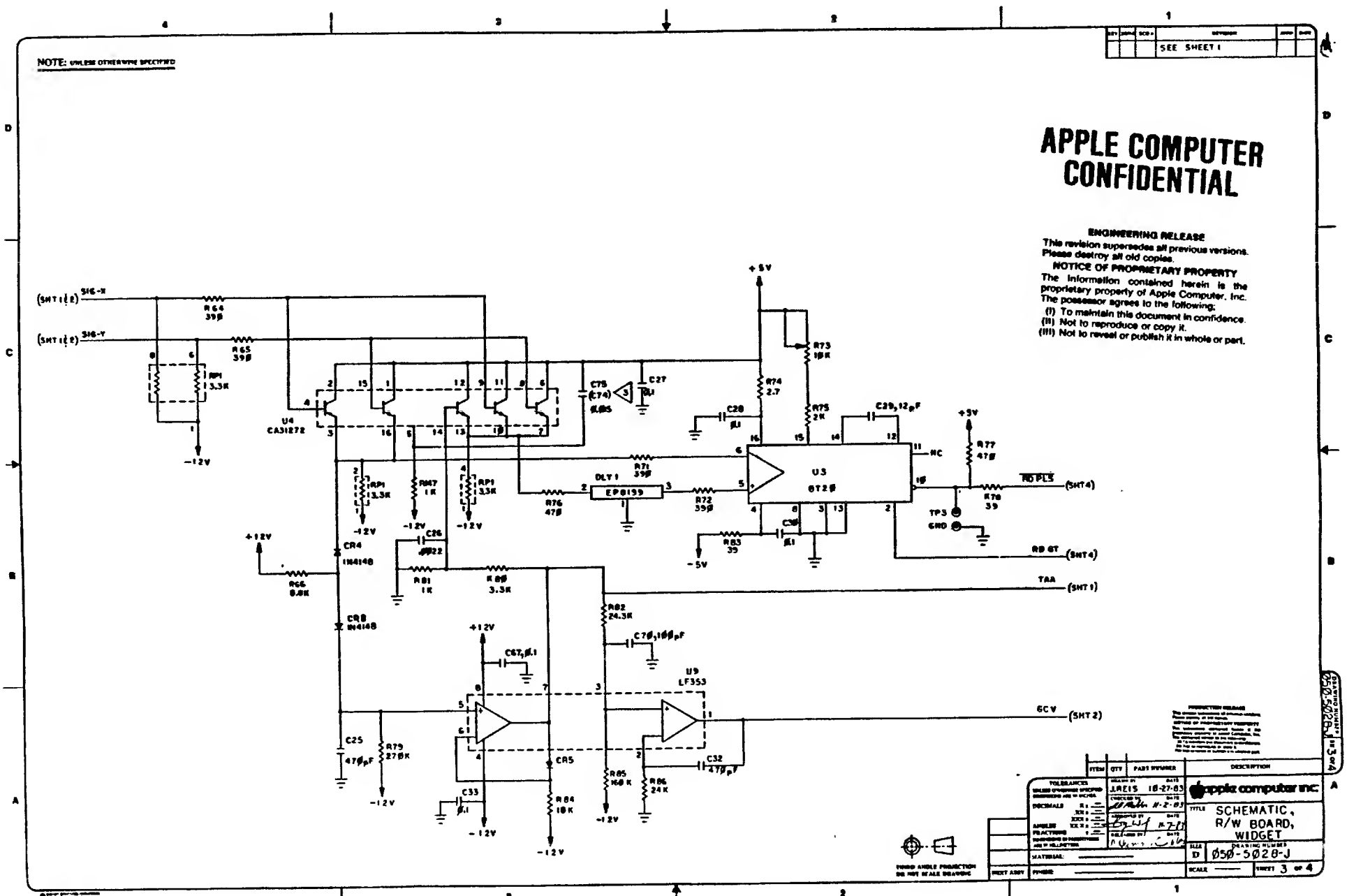
+5V
-12V
+12V
-5V
U5 CA3127E
U6 NE592
U12 MC1558
U18 LF353
TP1
TP2
SIG-X
SIG-Y
(SHT 1)
(SHT 3)
DX
DY
GCV
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc
SCHEMATIC, R/W BOARD, WIDGET
DRAWING NUMBER
Ø50-5028-J
SHEET 2 OF 4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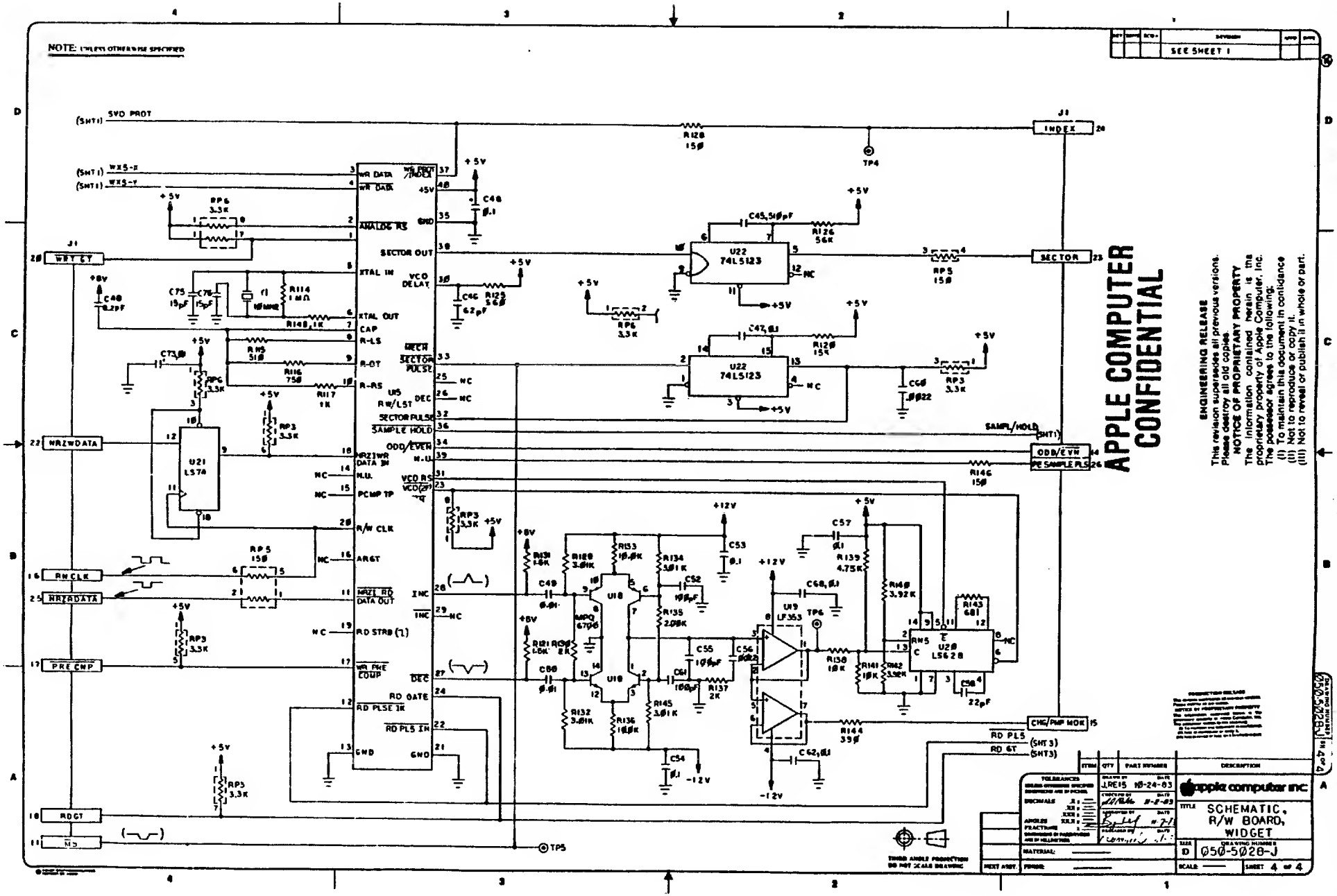
+5V
-12V
+12V
-5V
U4 CA3127Z
U3 8T28
U9 LF353
DLY1 EP0159
R64 39Ø
R65 39Ø
RP1 3.3K
R73 1ØK
R74 2.7
R75 2K
C29, 12pF
R77 47Ø
R78 39
R71 39Ø
R72 39Ø
R76 47Ø
R47 1K
R83 39
C26 .0022
R81 1K
R80 3.3K
R66 8.8K
CR4 1N4148
CR8 1N4148
CR5
R82 24.5K
C70, 100pF
C67, .1
C25 47pF
R79 27ØK
C33 .1
R84 10K
R85 40 K
R86 24K
C32 47pF
C75 (C74)
C27 .1
C28 .1
C58 .1
TP3
GND
NC
RD PLS (SHT4)
RD BT (SHT4)
TAA (SHT 1)
GCV (SHT 2)
SIG-X (SHT 1 E 2)
SIG-Y (SHT 1 E 2)
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc
SCHEMATIC, R/W BOARD, WIDGET
DRAWING NUMBER 050-5028-J
SHEET 3 OF 4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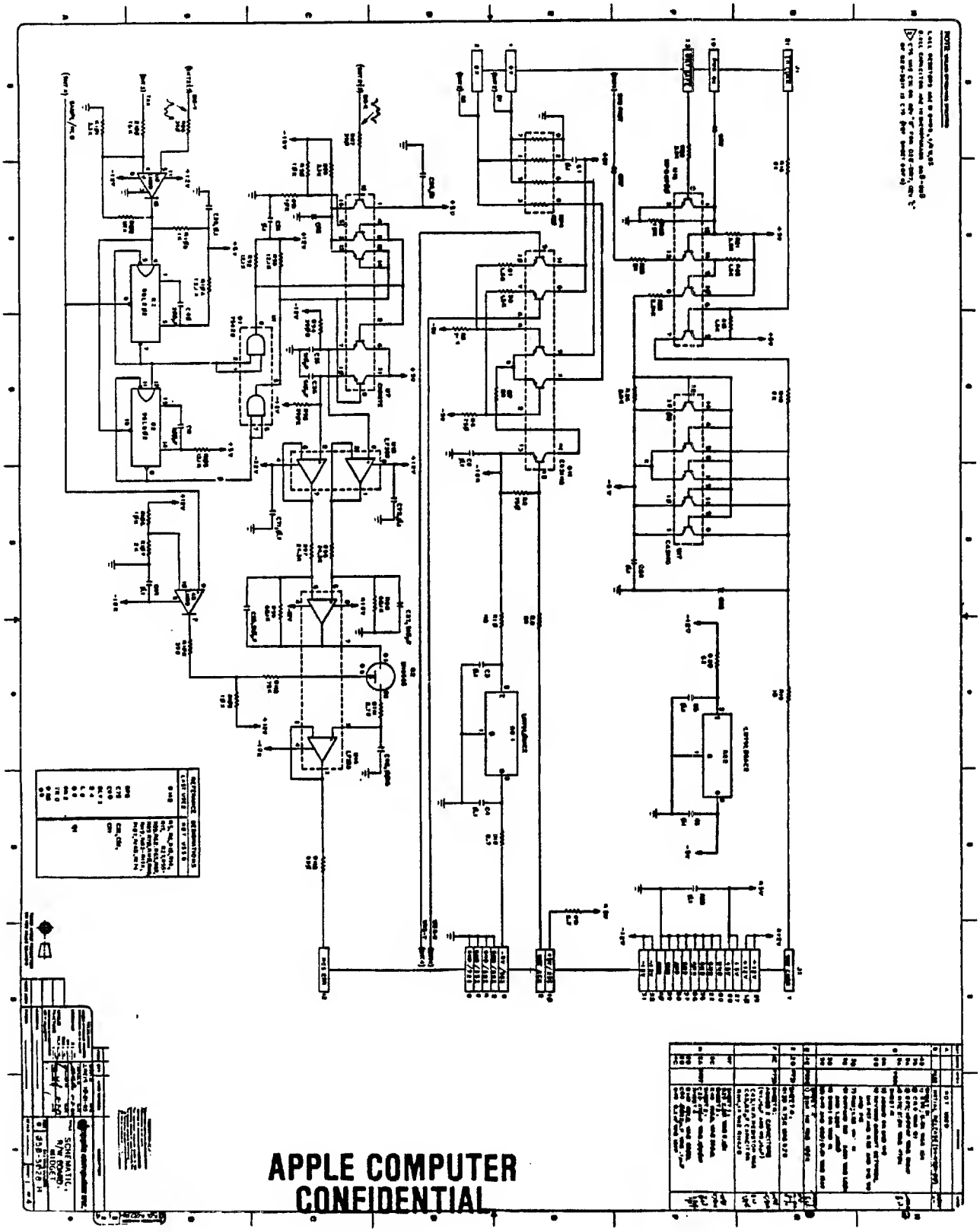
SVD PROT
WR5-H
WR5-V
WR DATA
WR GATE
ANALOG RS
SECTOR OUT
XTAL IN
XTAL OUT
CAP
R-LS
R-OT
R-RS
U5
R/W LS7
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
NRZ1WR DATA IN
PCMP TP
R/W CLK
ARGT
NRZ1 RD DATA OUT
RD STRB (1)
WR PRE COMP
RD GATE
RD PLS 1R
RD PLS IN
GND
VCO RS
VCO DELAY
WR GATE /INDEX
DECK SECTOR PULSE
INC
DEC
U21 LS74
U22 74LS123
U18 MPQ 6700
U19 LF353
U20 LS628
INDEX
SECTOR
SAMPL/HOLD
ODD/EVN
PE SAMPLE PLS
CHG/PMP MON
RD PLS
RD GT
NRZWDATA
NRZRDATA
RNCLK
PRECMP
WRTGT
RDGT
ND
TP4
TP5
TP6
+5V
+8V
+12V
-12V
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc
SCHEMATIC, R/W BOARD, WIDGET
050-5028-J
SHEET 4 OF 4
SIZE D



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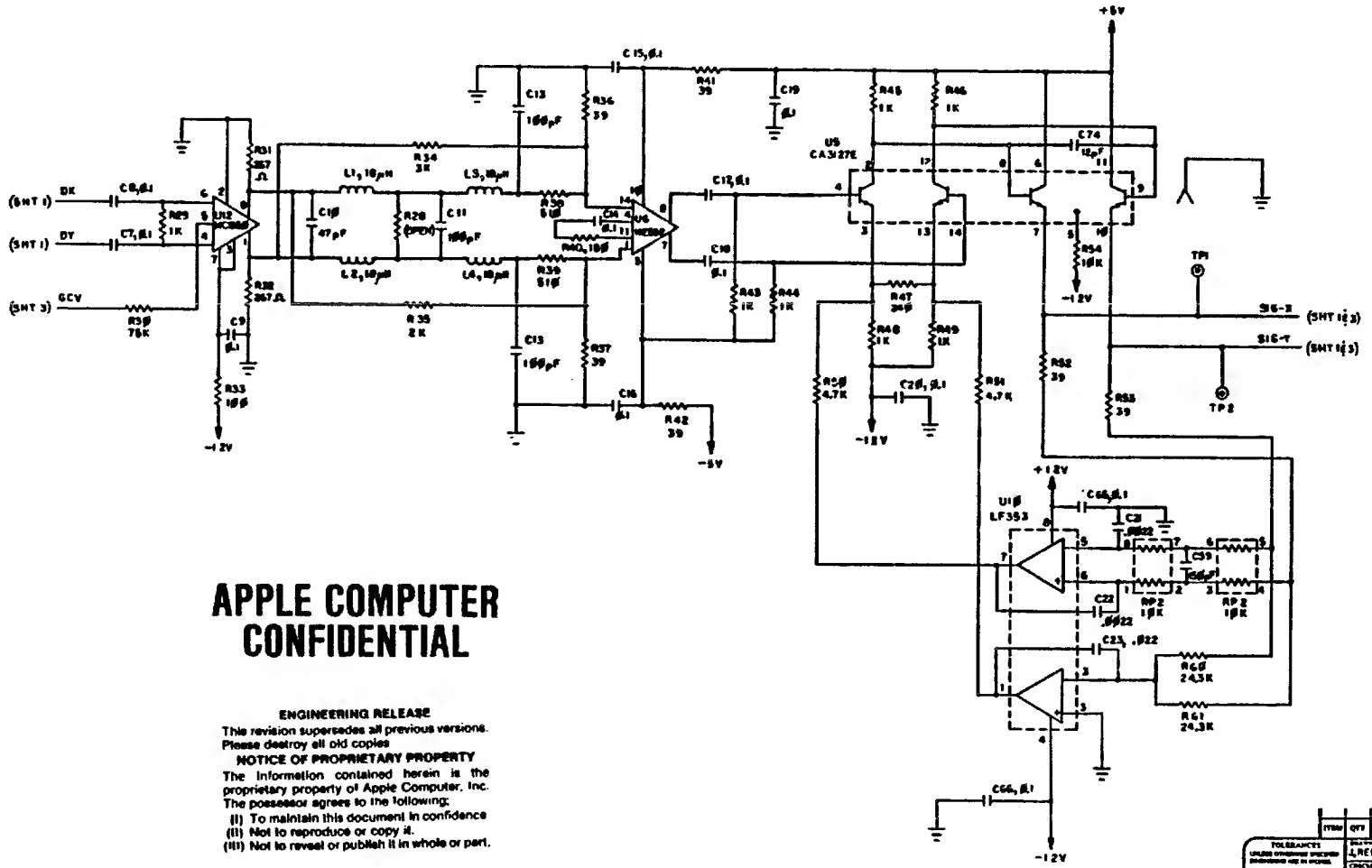
NOTE: UNLESS OTHERWISE SPECIFIED
SEE SHEET 1
+5V
-12V
-5V
+12V
TP1
TP2
SIG-2 (SHT 1 & 3)
SIG-7 (SHT 1 & 3)
(SHT 1) DK
(SHT 1) DY
(SHT 3) GCV
U5 CA3127E
U10 LF353
C15, .1
C13 100pF
C19 .1
C74 12pF
C12, .1
C10 .1
C14 .1
C16 .1
C9 .1
C66, .1
C68, .1
C28, .1
C21 .022
C22 .022
C23, .022
C39 100pF
R41 39
R36 39
R37 39
R42 39
R52 39
R53 39
R45 1K
R44 1K
R48 1K
R46 1K
R49 1K
R47 2K
R54 10K
R50 4.7K
R51 4.7K
R60 24.3K
R61 24.3K
RP2 10K
RP2 10K
L1, 10μH
L2, 10μH
L3, 10μH
L4, 10μH
R34 3K
R35 2K
R30 51Ω
R40, 10Ω
R31 357Ω
R32 357Ω
R33 10Ω
R29 75K
R28 (PDN)
C11 100pF
C18 47pF
C8, .1
C7, .1
R27 1K
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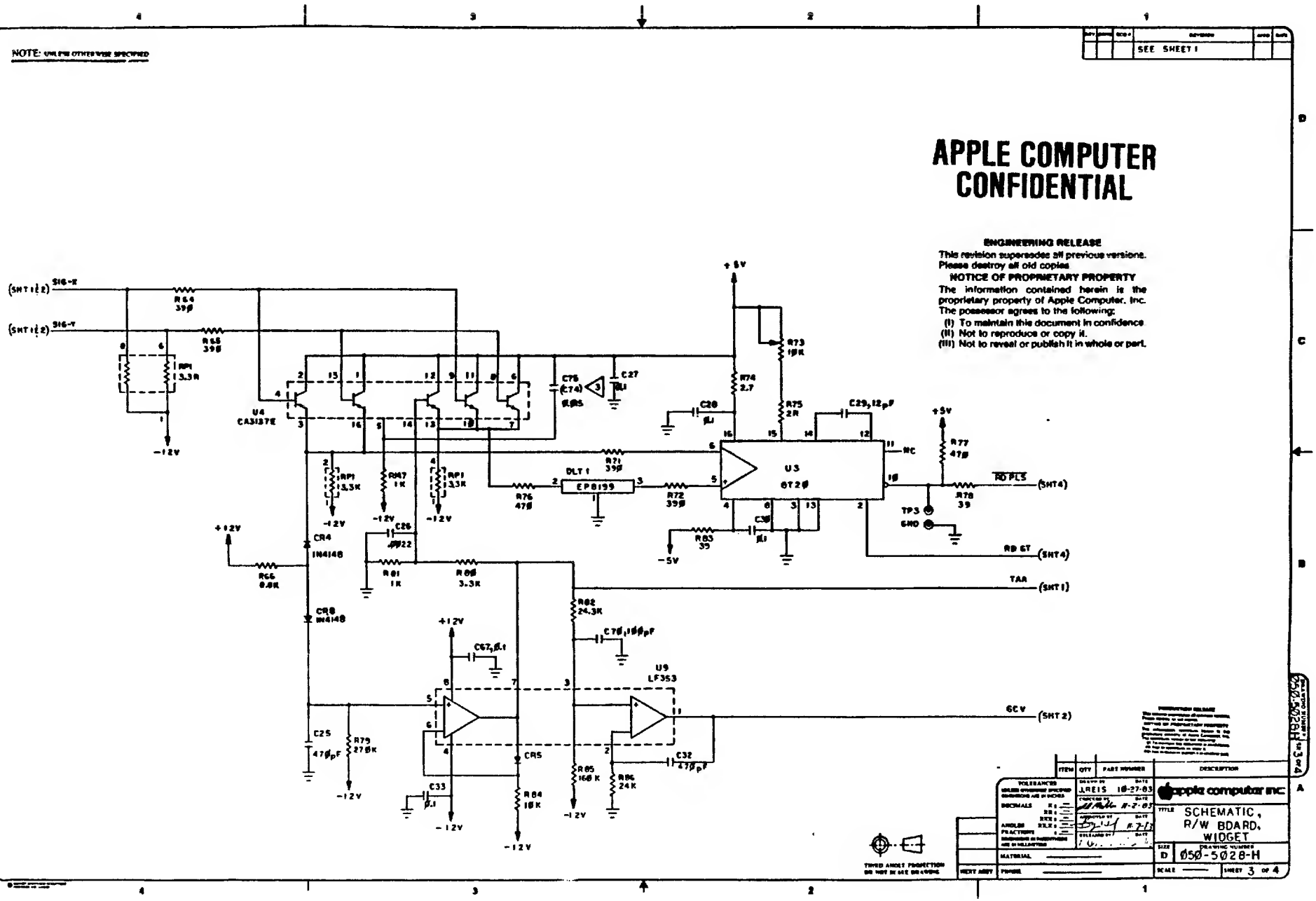
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc.
SCHEMATIC, R/W BOARD, WIDGET
D 050-5028-H
SCALE
SHEET 2 OF 4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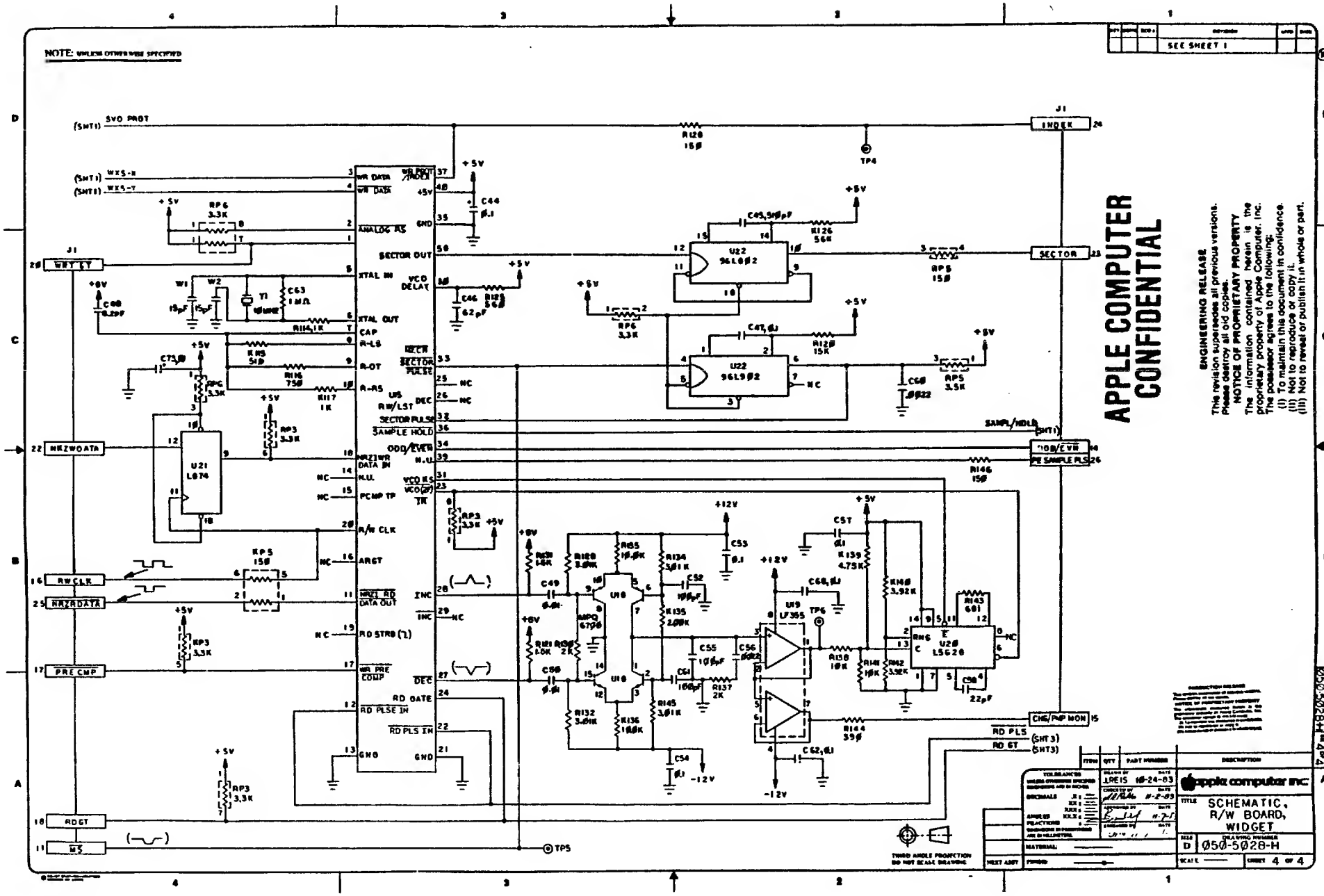
U4 CA3137E
U3 6T2Ø
U9 LF353
DLT 1 EP8199
+5V
-5V
+12V
-12V
R64 39Ø
R65 39Ø
RP1 3.3K
R73 1ØK
R74 2.7
R75 2K
C29, 12pF
R77 47Ø
R78 39
RD PLS
RD 6T
TP3
GND
R76 47Ø
R72 39Ø
R71 39Ø
R83 35
C38
C26 .ØØ22
R81 1K
R68 3.3K
R66 8.8K
RM7 1K
CR4 IN4148
CR8 IN4148
CR5
C67, Ø.1
C33 Ø.1
C25 47ØpF
R79 27ØK
R82 24.3K
C78, 18ØpF
R85 16Ø K
R84 18K
R86 24K
C32 47ØpF
TAA
GCV
(SHT 1)
(SHT 2)
(SHT 4)
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc
SCHEMATIC, R/W BOARD, WIDGET
D
Ø5Ø-5Ø28-H
SHEET 3 OF 4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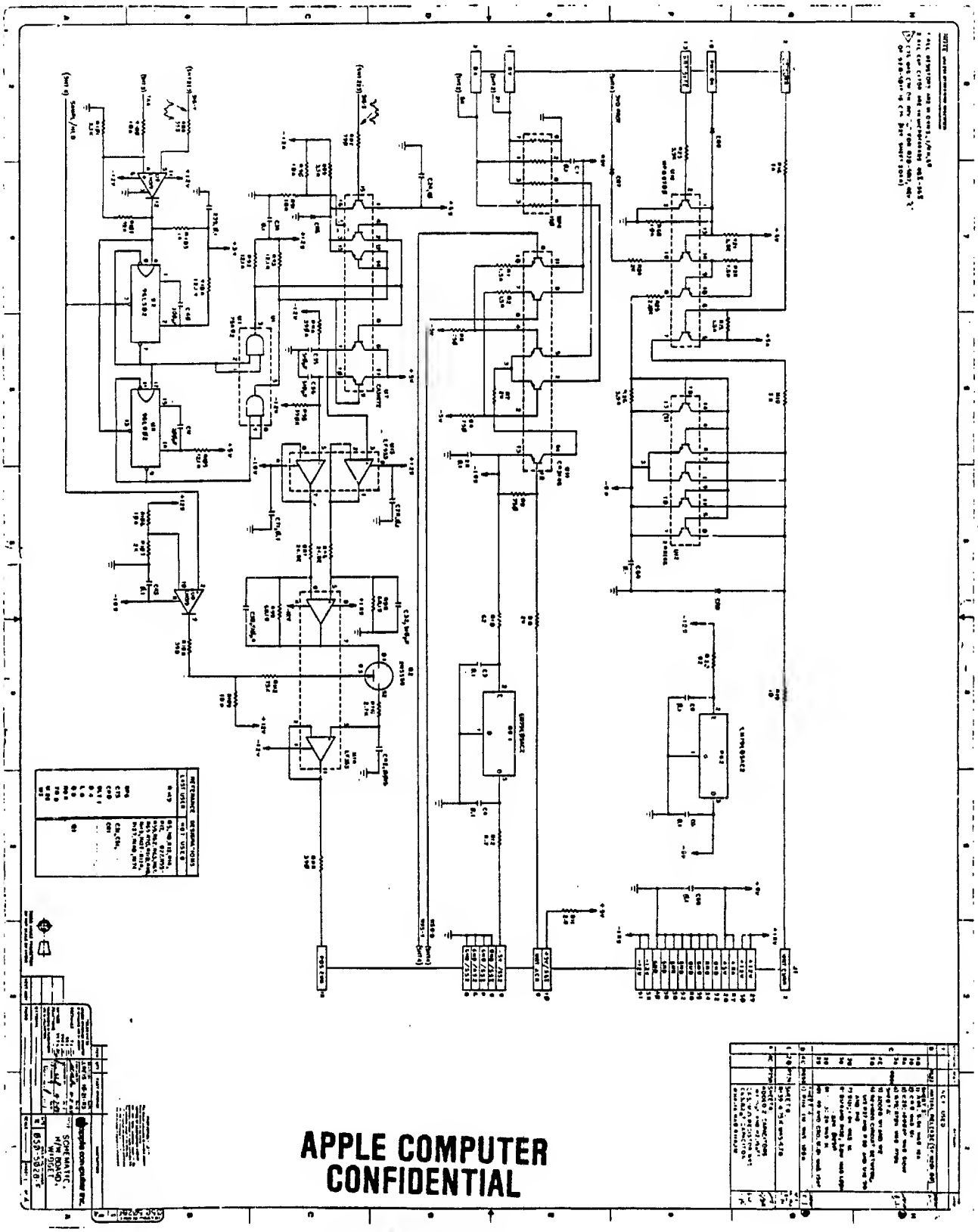
SVO PROT
WXS-H
WXS-V
WR DATA
WR DATA
ANALOG RS
SECTOR OUT
XTAL IN
XTAL OUT
CAP
R-LS
R-OT
R-RS
WR/LST
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
NRZ1/WR DATA IN
N.U.
VCO RS
VCO CAP
R/W CLK
ARGT
NRZ1 RD DATA OUT
RD STRB (1)
WR PRE COMP
RD GATE
RD PLSE IN
RD PLS IN
GND
WR PROT /INDEX
+5V
GND
VCO DELAY
SECTOR PULSE
DEC
INC
DEC
NC
N.U.
INDEX
SECTOR
SAMPL/HOLD
ODD/EVN
PE SAMPLE PLS
CHG/PMP MON
RD PLS
RD GT
WRT GT
NRZWDATA
RWCLK
NRZRDATA
PRECMP
RDGT
MS
TP4
TP5
TP6
U21 LS74
U22 96LS02
U8
U9 LF355
U20 LS628
RP3 3.3K
RP5 15Ω
RP6 3.3K
RP8 3.3K
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer inc.
SCHEMATIC, R/W BOARD, WIDGET
DRAWING NUMBER 050-5028-H
SIZE D
SCALE
SHEET 4 OF 4
050-5028-H REV A



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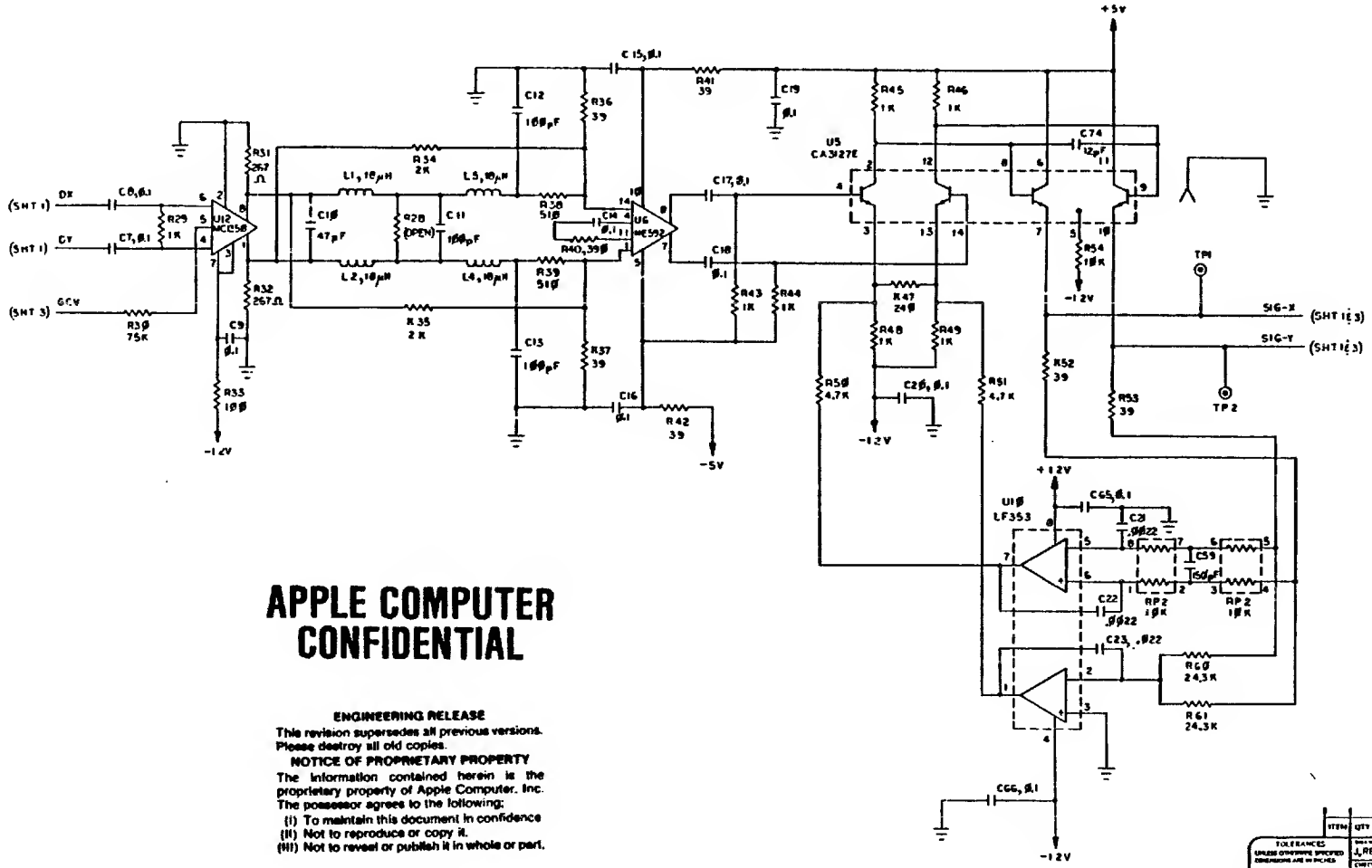

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DO NOT SCALE DRAWING

ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DECIMALS .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ±0°0'0"
FRACTIONS ±1/64
DRAWN BY L.REIS 10-26-83
CHECKED BY 11-2-83
APPROVED BY 11-7-83
RELEASED BY
MATERIAL
NEXT ASSY.
FINISH

apple computer inc.

TITLE SCHEMATIC, R/W BOARD, WIDGET

SIZE D | DRAWING NUMBER 050-5028-F

SCALE | SHEET 2 OF 4

DRAWING NUMBER 050-5028-F REV 2 OF 4

NOTE UNLESS OTHERWISE SPECIFIED

REVISION	APPD	DATE
SEE SHEET 1		

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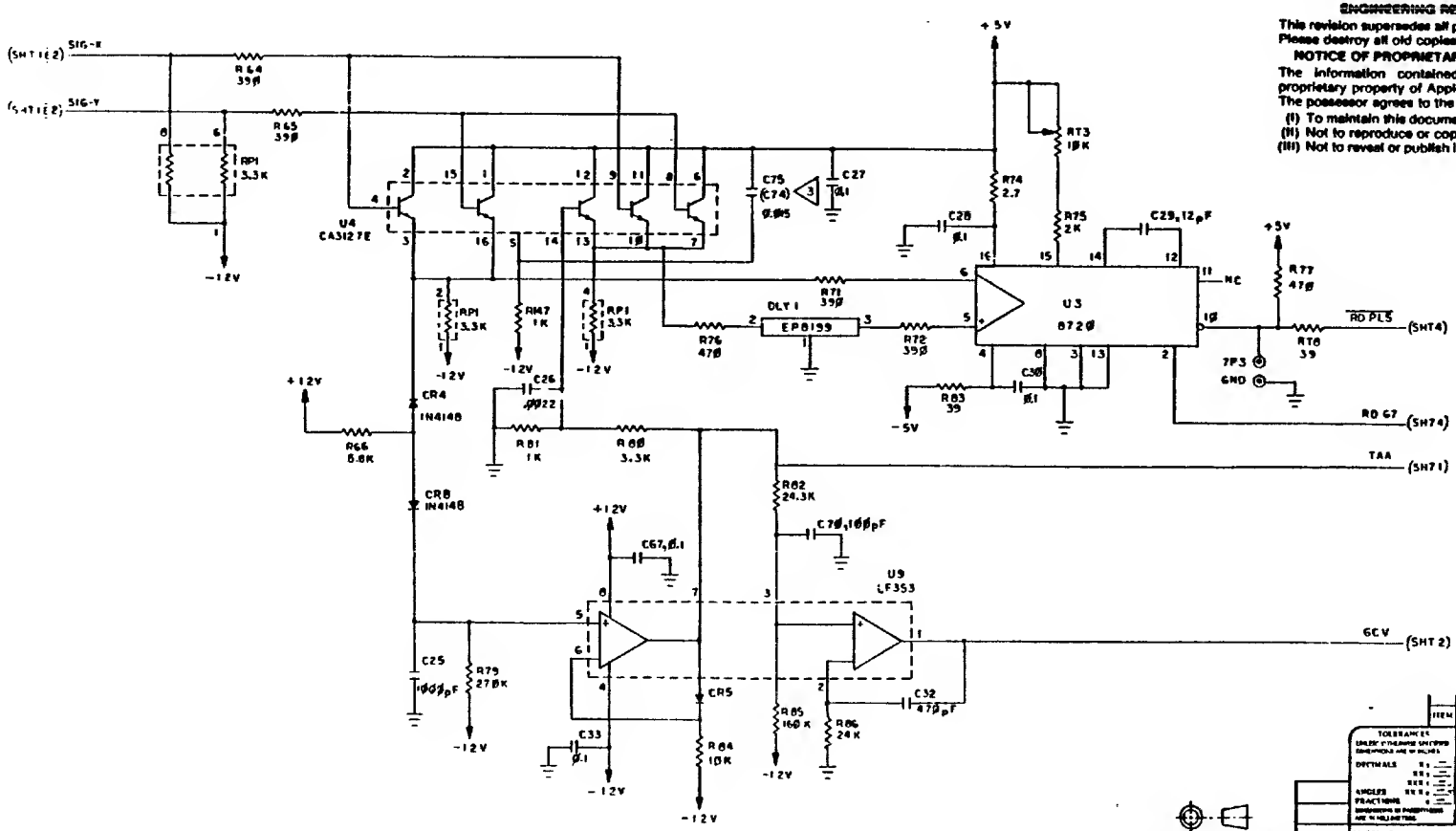


ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DECIMALS .X ±.1 .XX ±.01 .XXX ±.005
ANGLES FRACTIONS ±1/64
DIMENSIONS OF PROTRUSIONS ARE NOT INCLUDED
MATERIAL
NEXT ASSY FINISH

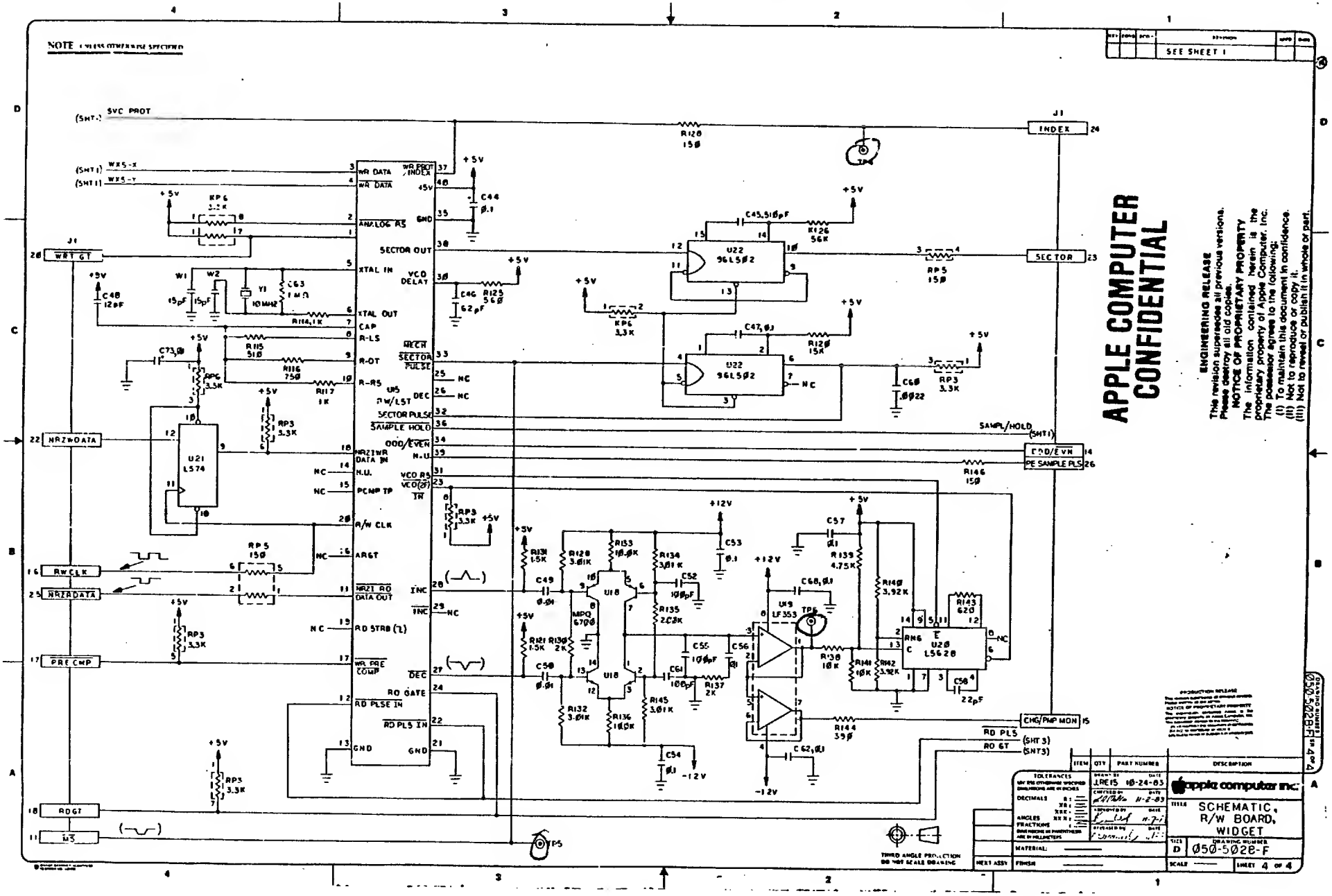
DRAWN BY J.REIS DATE 10-27-83
ENGINEER DATE 11-2-83
APPROVED BY DATE 11-7-83
RELEASED BY DATE

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

apple computer inc

TITLE SCHEMATIC, R/W BOARD, WIDGET
SIZE D
DRAWING NUMBER 050-5028-F
SCALE
SHEET 3 OF 4

050-5028-F REV 3Ø4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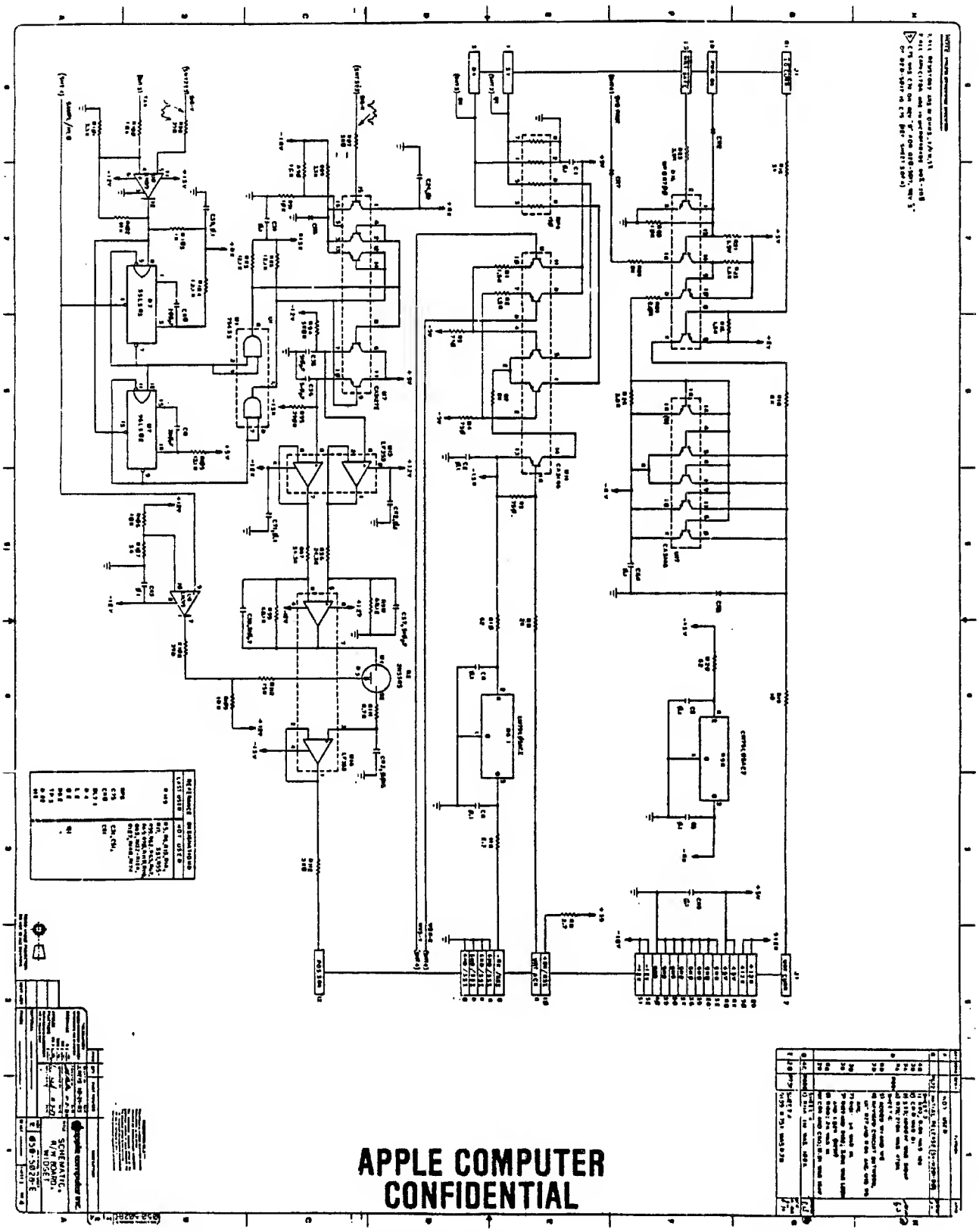
SVC PROT
WR DATA
WR REQ
ANALOG RS
SECTOR OUT
XTAL IN
VCO DELAY
XTAL OUT
CAP
R-LS
R-OT
R-RS
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
N.U.
NRZ1WR DATA IN
VCO RS
PCMP TP
VCO(2F) IN
R/W CLK
ARGT
NRZ1 RD DATA OUT
RD STRB (L)
WR PRE COMP
RD GATE
RD PLSE IN
RD PLS IN
GND
INDEX
SECTOR
SAMPL/HOLD (SHT1)
ODD/EVN
PE SAMPLE PLS
CHG/PMP MON
RD PLS (SHT 3)
RD GT (SHT3)
WRT GT
NRZWDATA
RWCLK
NRZRDATA
PRE CMP
RDGT
M3
U21 LS74
U22 96LS02
U18 MPQ 6700
U9 LF353
U20 LS628
TP5
TP6
THIRD ANGLE PROJECTION DO NOT SCALE DRAWING
apple computer inc.
SCHEMATIC, R/W BOARD, WIDGET
SIZE D
DRAWING NUMBER 050-5028-F
SHEET 4 OF 4
050-5028-F REV A 4 of 4



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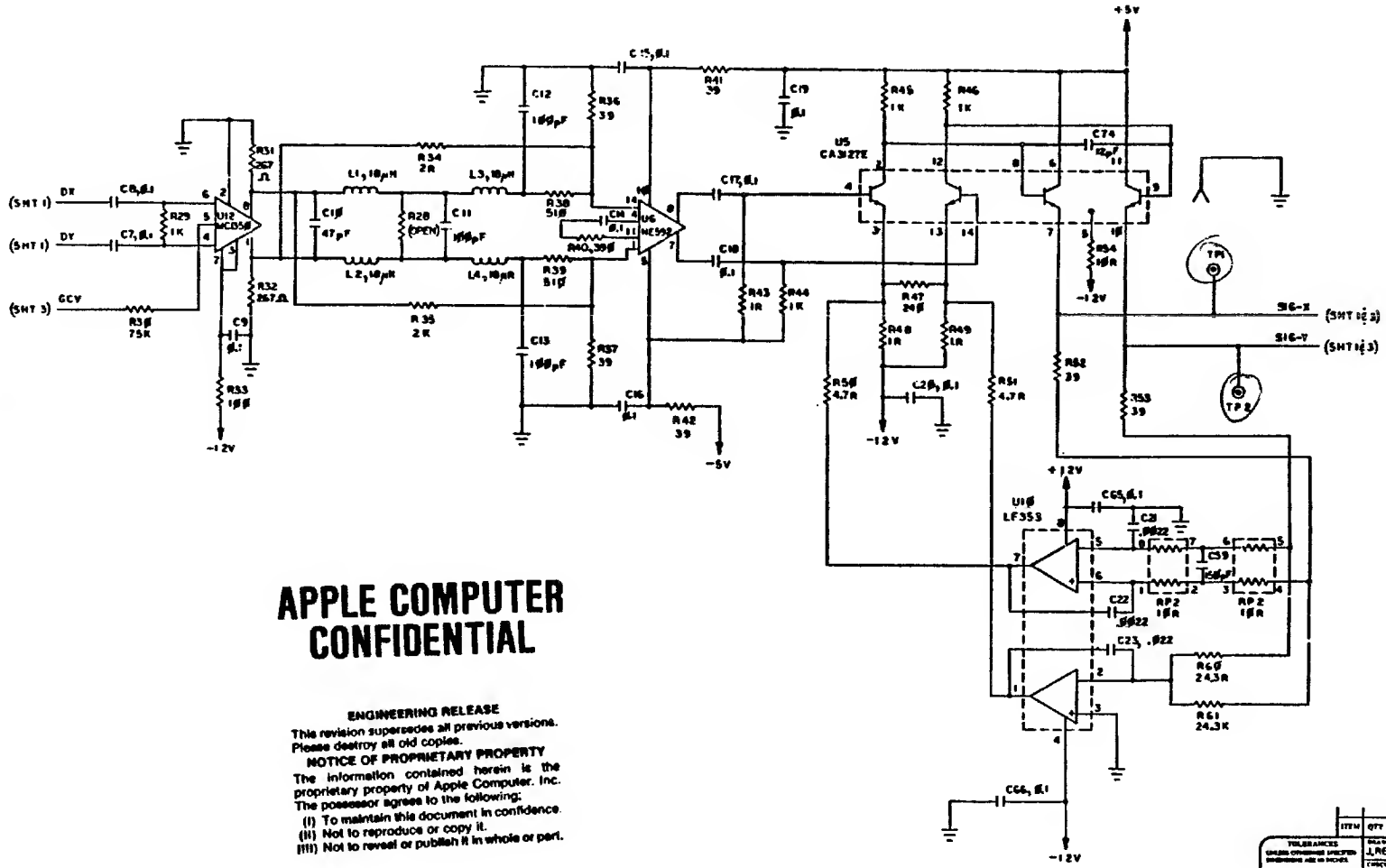
SEE SHEET 1



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THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DECIMALS .X ± .XX ± .XXX ±
ANGLES FRACTIONS
DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS
MATERIAL:
NEXT ASSY.
FINISH

DRAWN BY J.REIS 10-26-83
TRACED BY
CHECKED BY
ENGINEER BY
RELEASED BY

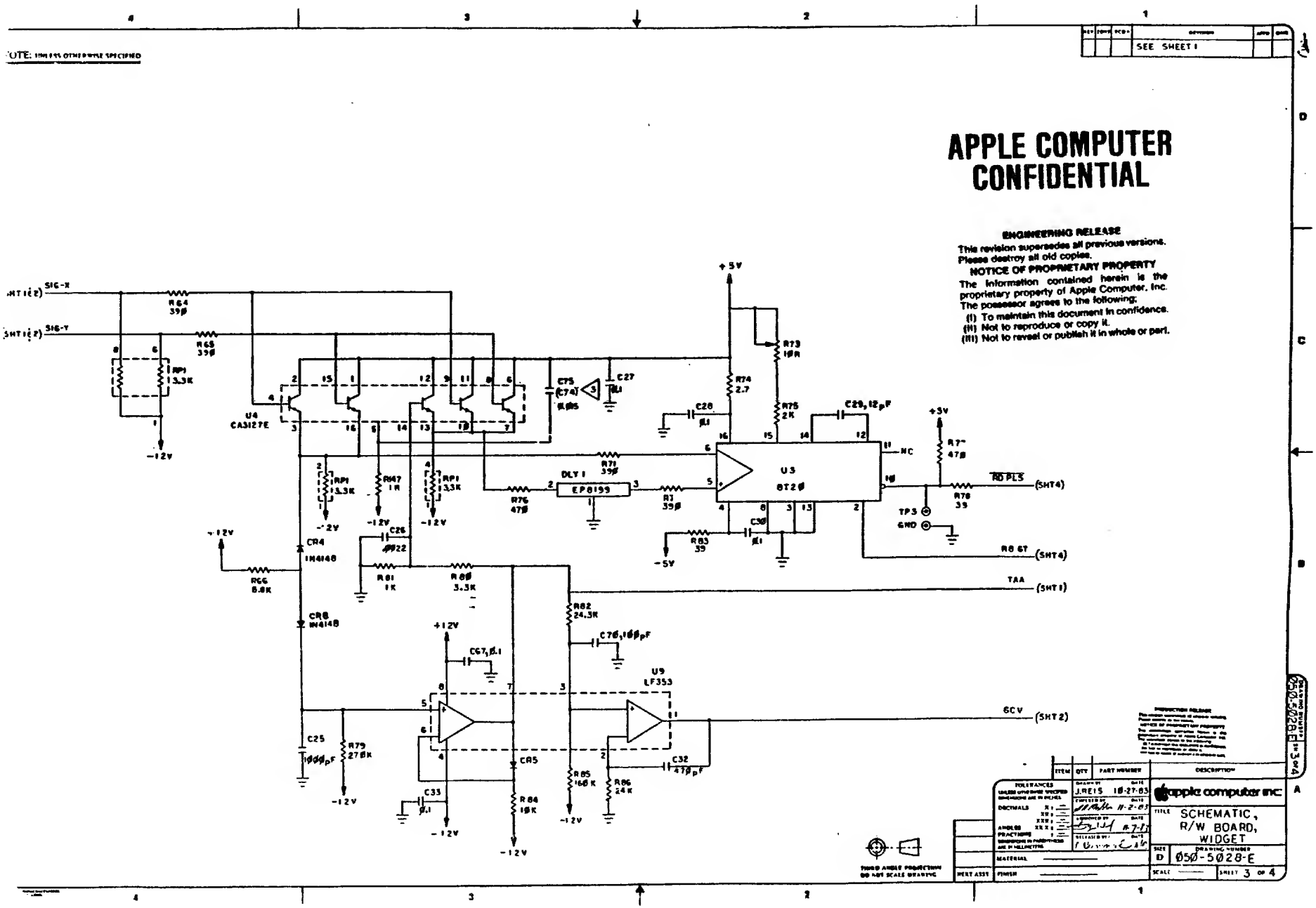
apple computer inc

TITLE SCHEMATIC, R/W BOARD, WIDGET

SIZE D | DRAWING NUMBER 050-5028-E

DRAWING NUMBER 050-5028-E REV E SHT 2 OF 4

SHEET 2 OF 4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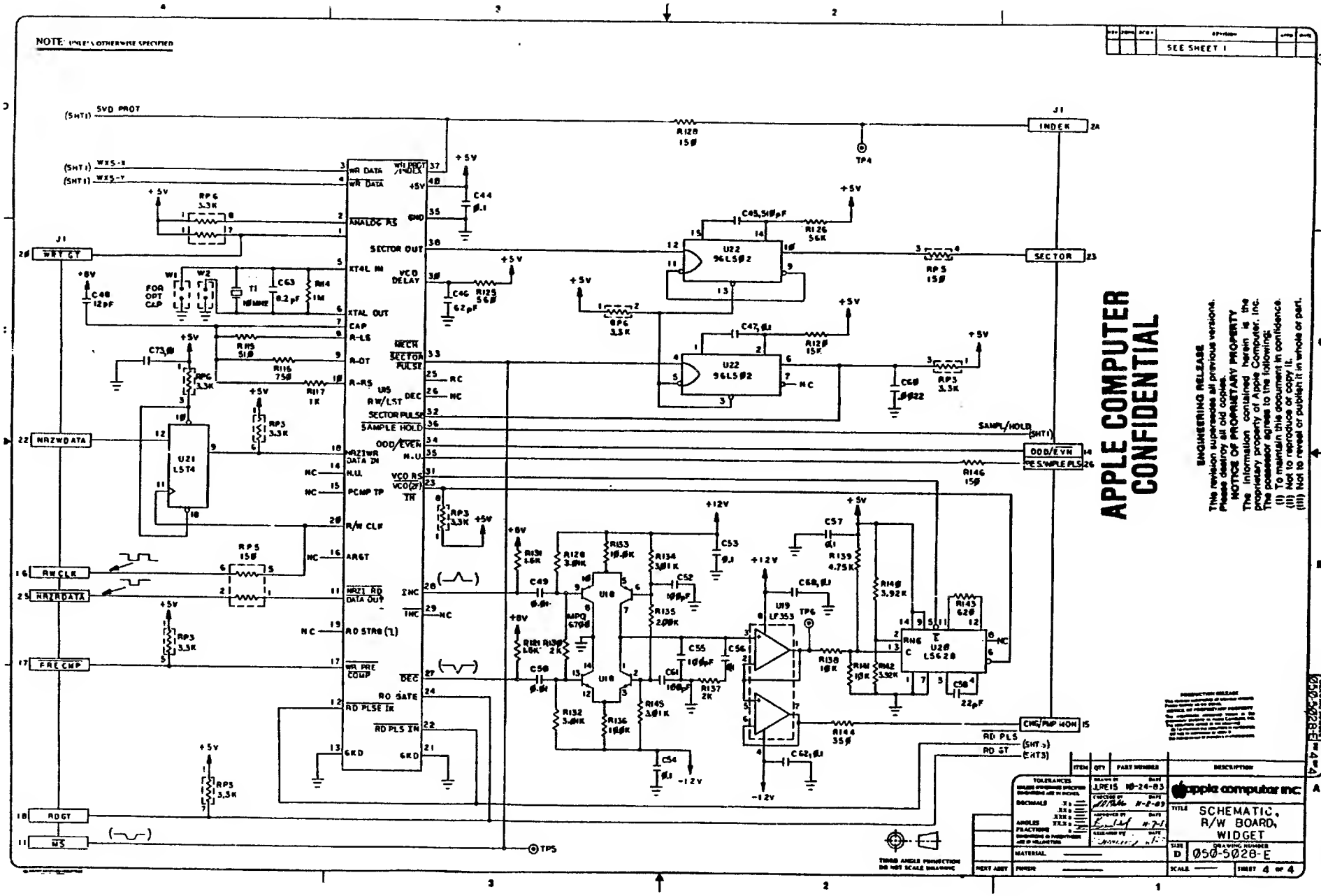
SIG-X
SIG-Y
U4 CA3127E
U3 8T28
U9 LF353
EP8199
RD PLS (SHT4)
RD ST (SHT4)
TAA (SHT1)
6CV (SHT2)
TP3
GND
CR4 IN4148
CR5
CR6 IN4148
THIRD ANGLE PROJECTION DO NOT SCALE DRAWING
apple computer inc
SCHEMATIC, R/W BOARD, WIDGET
D
Ø5Ø-5Ø28-E
SHEET 3 OF 4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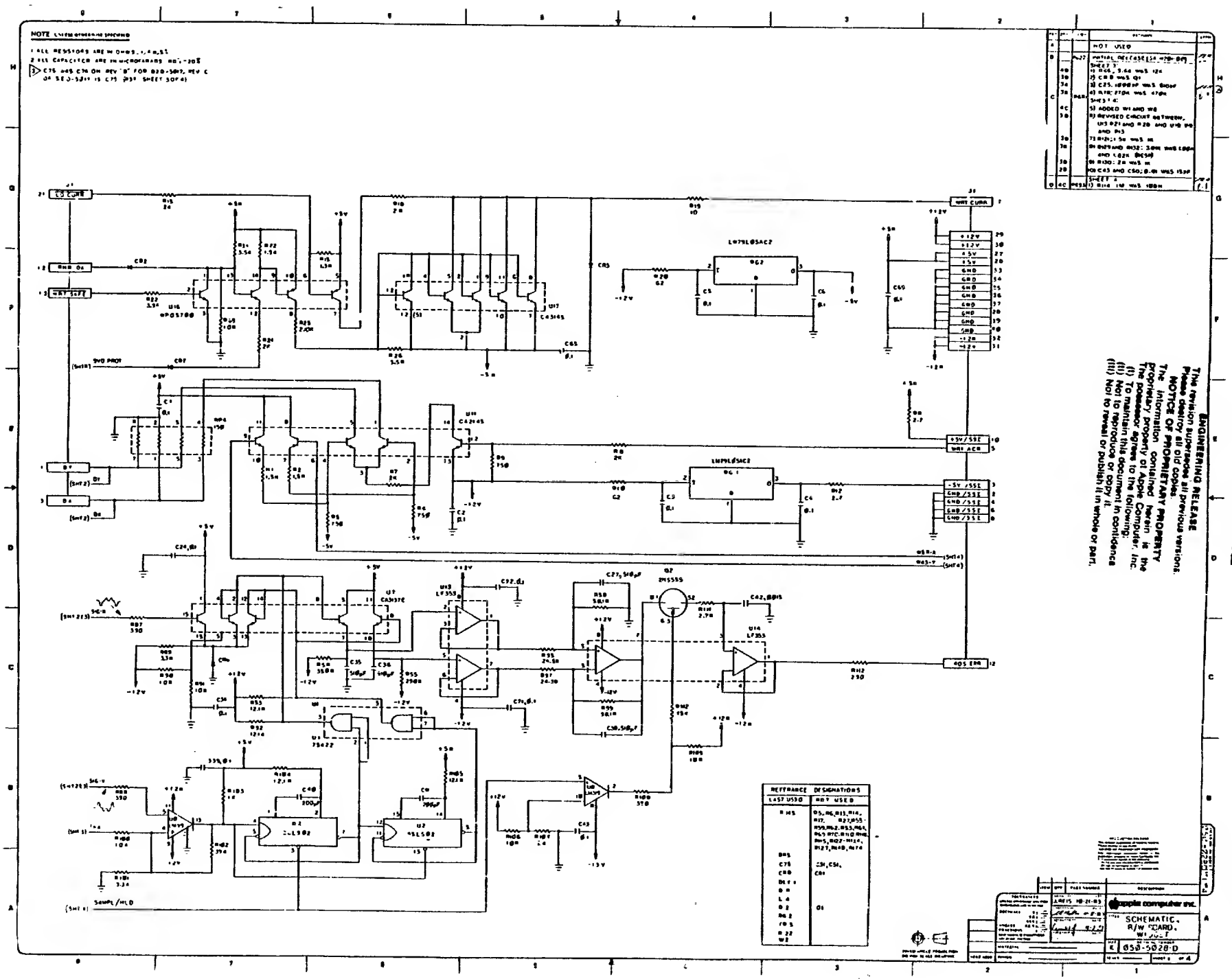
SVD PROT
WR DATA
WR DATA
ANALOG RS
SECTOR OUT
XTAL IN
XTAL OUT
CAP
R-LS
R-OT
R-RS
R/W CLK
NRZ DATA
PRE CMP
RDGT
WS
INDEX
SECTOR
ODD/EVN
PRE SAMPLE PLS
SAMPLE/HOLD
CMP/PMP HON
RD PLS
RD GT
U21 LS74
U22 96LS02
U18 MPQ 6790
U19 LF353
U20 LS628
SCHEMATIC, R/W BOARD, WIDGET
apple computer inc
Ø50-5028-E
SHEET 4 OF 4


NOTE
1 ALL RESISTORS ARE IN OHMS, 1/4W, 5%
2 ALL CAPACITOR ARE IN MICROFARADS 80/-20%
3 C75 WAS C7N ON REV 'B' FOR 820-5017, REV C OF 820-5011 IS C75 (SHEET 3 OF 4)
HOT USED
INITIAL RELEASE
SHEET 3
SHEET 4
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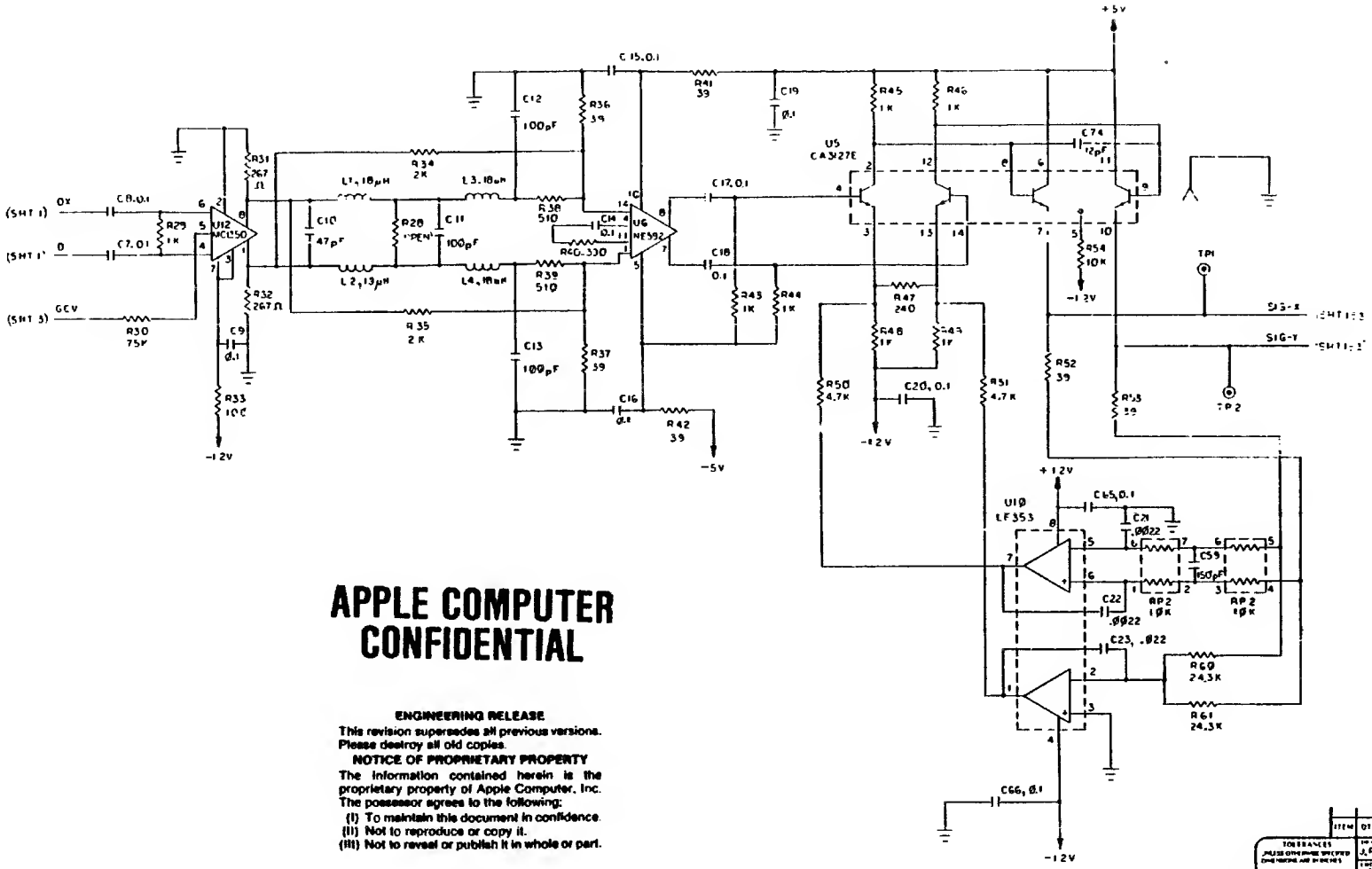
REFERANCE DESIGNATIONS
LAST USED
NOT USED
SCHEMATIC, R/W BOARD, W/ VIA
820-5028-D



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ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS .X ±1 .XX ±.1 .XXX ±.01
ANGLES ±1 DEGREES 1
DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS
MATERIAL
NEXT ASSY
FINISH

DRAWN J.REIS 10-26-85
ENGINEER 10-2-85
MFG APPROVED
QUALITY APPROVED

THIRD ANGLE PROJECTION DO NOT SCALE DRAWING

appleZ.com

TITLE SCHEMA R/W BOA WIDG

SIZE D 050-50

SCALE

SHEET 1

NOTE: UNLESS OTHERWISE SPECIFIED

REV	ZONE	ECN #	REVISION	APPD
			SEE SHEET 1	

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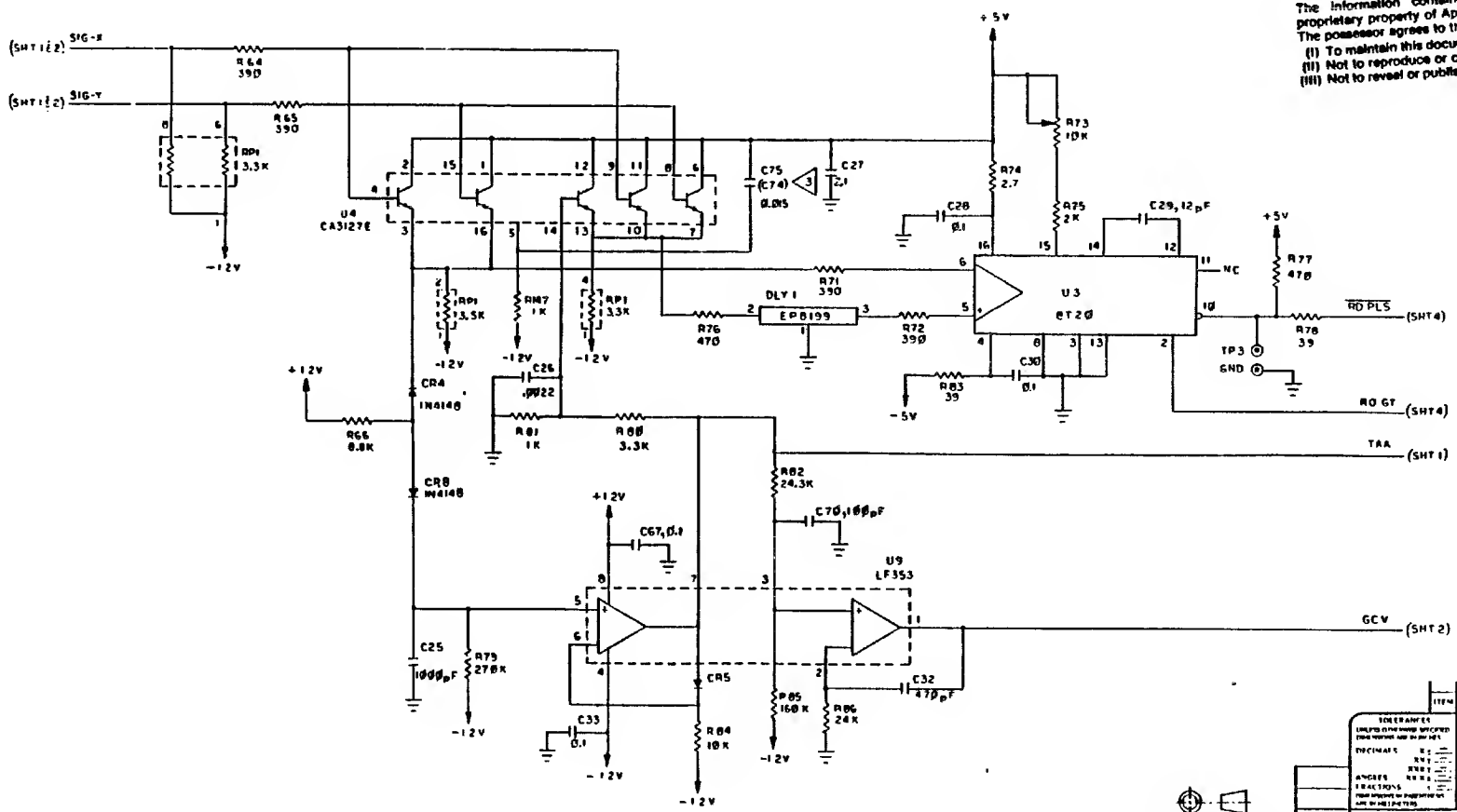


ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES: UNLESS OTHERWISE SPECIFIED
DECIMALS .X ±.1, .XX ±.01, .XXX ±.005
ANGLES ±1°
FRACTIONS ±1/64
MATERIAL
NEXT ASSY
FINISH

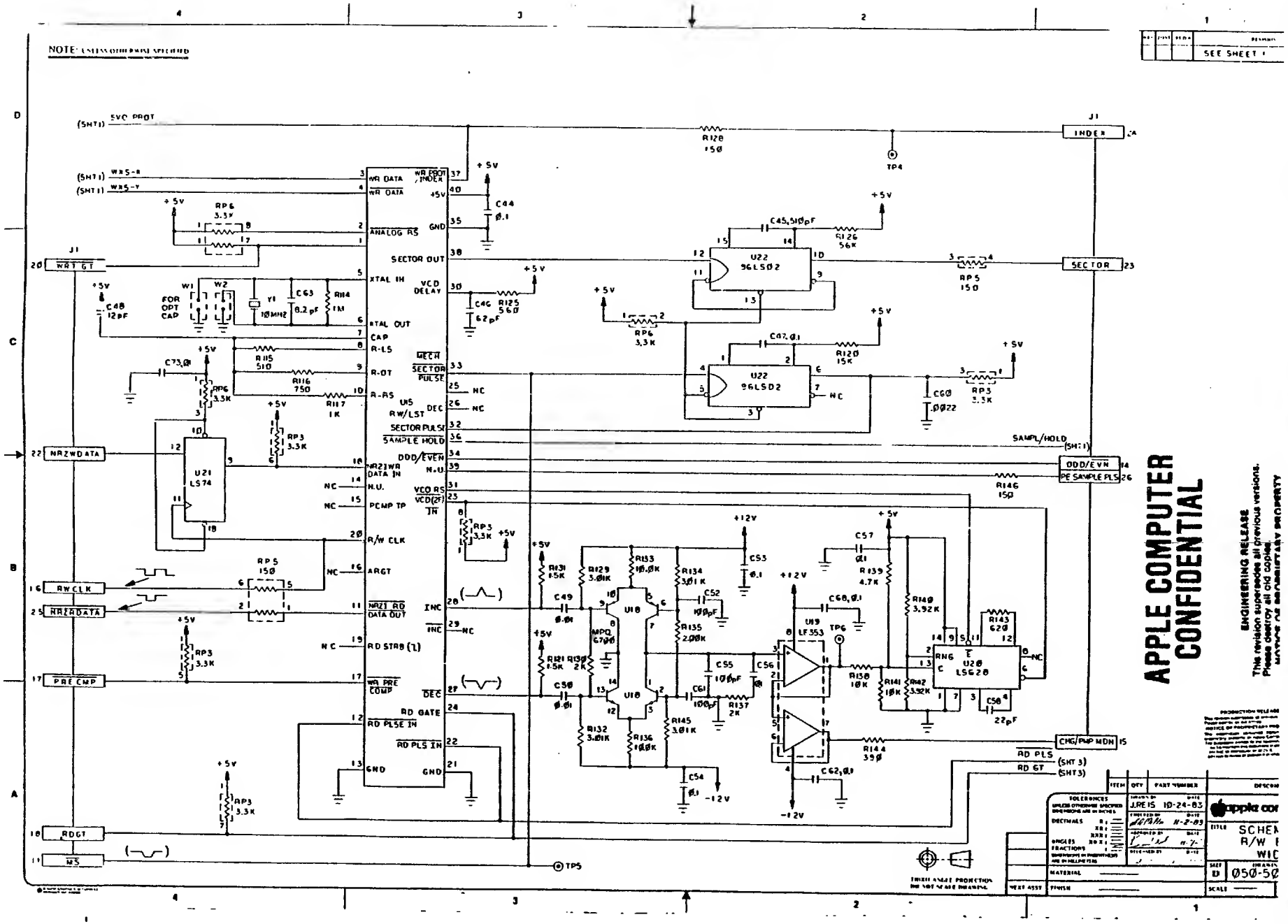
DRAWN BY	J.REIS	10-27-83
ENGINEER		
APPROVED BY		
QUALITY ASSURANCE		

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

apple computer

SCHEMATIC, R/W BOARD, WIDGET

SIZE D | DRAWING NUMBER 050-5028-D
SCALE | SHEET 3 OF


NOTE: UNLESS OTHERWISE SPECIFIED
SEE SHEET 1
(SHT1) SVC PROT
R128 150
TP4
J1
INDEX
(SHT1) WR5-R
(SHT1) WR5-W
WR DATA
WR DATA
ANALOG RS
SECTOR OUT
XTAL IN
XTAL OUT
CAP
R-LS
R-OT
R-RS
R/W/LST
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
NRZ1WR DATA IN
N.U.
PCMP TP
R/W CLK
ARGT
NRZI RD DATA OUT
RD STRB (L)
WR PRE COMP
RD GATE
RD PLS IN
GND
VCO DELAY
VCO RS
VCO(2F) IN
WR PROT / INDEX
+5V
GND
SECTOR PULSE
R-OT
R-RS
R/W/LST
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
N.U.
NRZ1WR DATA IN
N.U.
PCMP TP
R/W CLK
ARGT
NRZI RD DATA OUT
RD STRB (L)
WR PRE COMP
RD GATE
RD PLS IN
GND
VCO RS
VCO(2F) IN
WR PROT / INDEX
+5V
GND
J1
WRT GT
NRZWDATA
R/W CLK
NRZRDATA
PRE CMP
RDGT
M5
TP5
SECTOR
SAMPL/HOLD (SHT1)
ODD/EVN
PE SAMPLE PLS
CHG/PMP MON
RD PLS (SHT 3)
RD GT (SHT3)
U21 LS74
U22 96LS02
U18 MPQ 6790
U19 LF353
U20 LSG20
RP3 3.3K
RP5 150
RP6 3.3K
Y1 16MHZ
TP6
-12V
+12V
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DO NOT SCALE DRAWING
J.REIS 10-24-83
SCHEM
R/W
WIC
D
050-5

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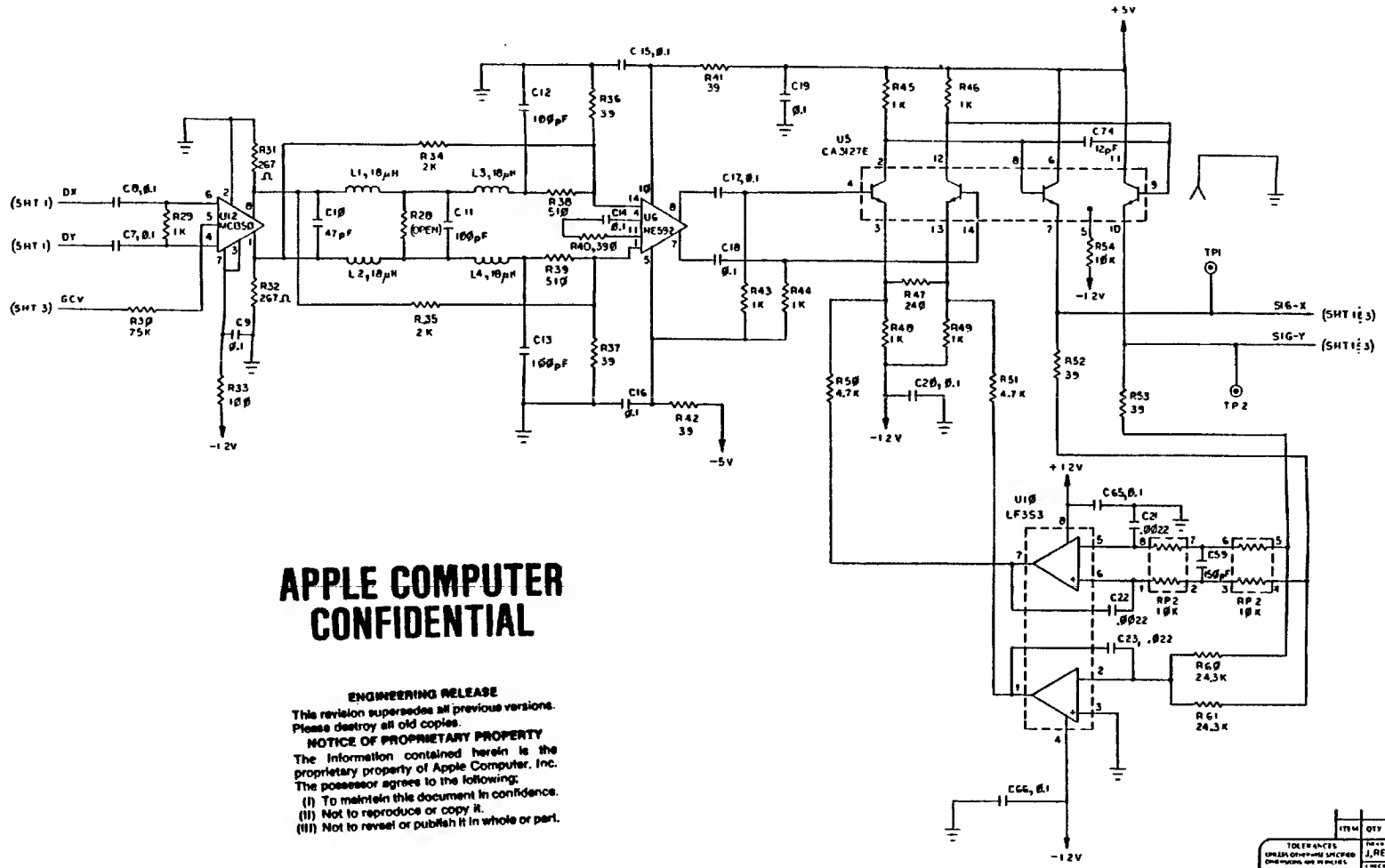

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ITEM	QTY	PART NUMBER	DESCRIPTION
TOLERANCES UNLESS OTHERWISE SPECIFIED	DRAWN J.REIS	10-26-83	apple computer
DECIMALS	CHECKED	11-2-83	SCHEMATIC, R/W BOARD, WIDGET
ANGLES	APPROVED		SIZE D
FRACTIONS	ISSUED		DRAWING NUMBER 050-5028-C
MATERIAL			SCALE — SHEET 2 OF
NEXT ASSY	USED ON		

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

NOTE: UNLESS OTHERWISE SPECIFIED

REV	ZONE	ECO #	REVISION	APP
			SEE SHEET 1	

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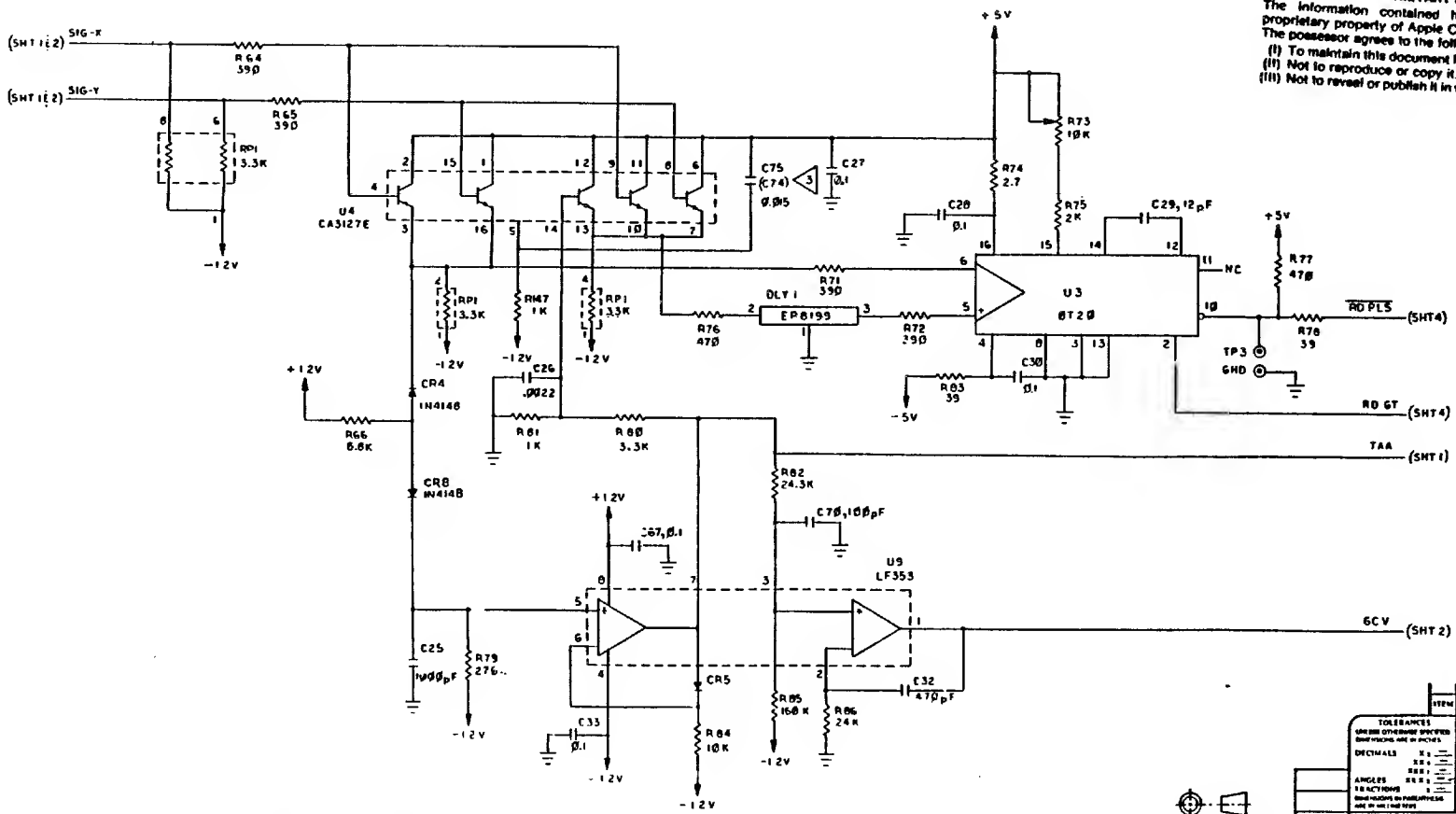


ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS .X ± .XX ± .XXX ±
ANGLES ± FRACTIONS ±
DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS

DRAWN BY JREIS DATE 10-27-83
CHECKED BY DATE 11-2-83
APPROVED BY DATE 11-7-83
RELEASED BY DATE

MATERIAL
NEXT ASSY FINISH

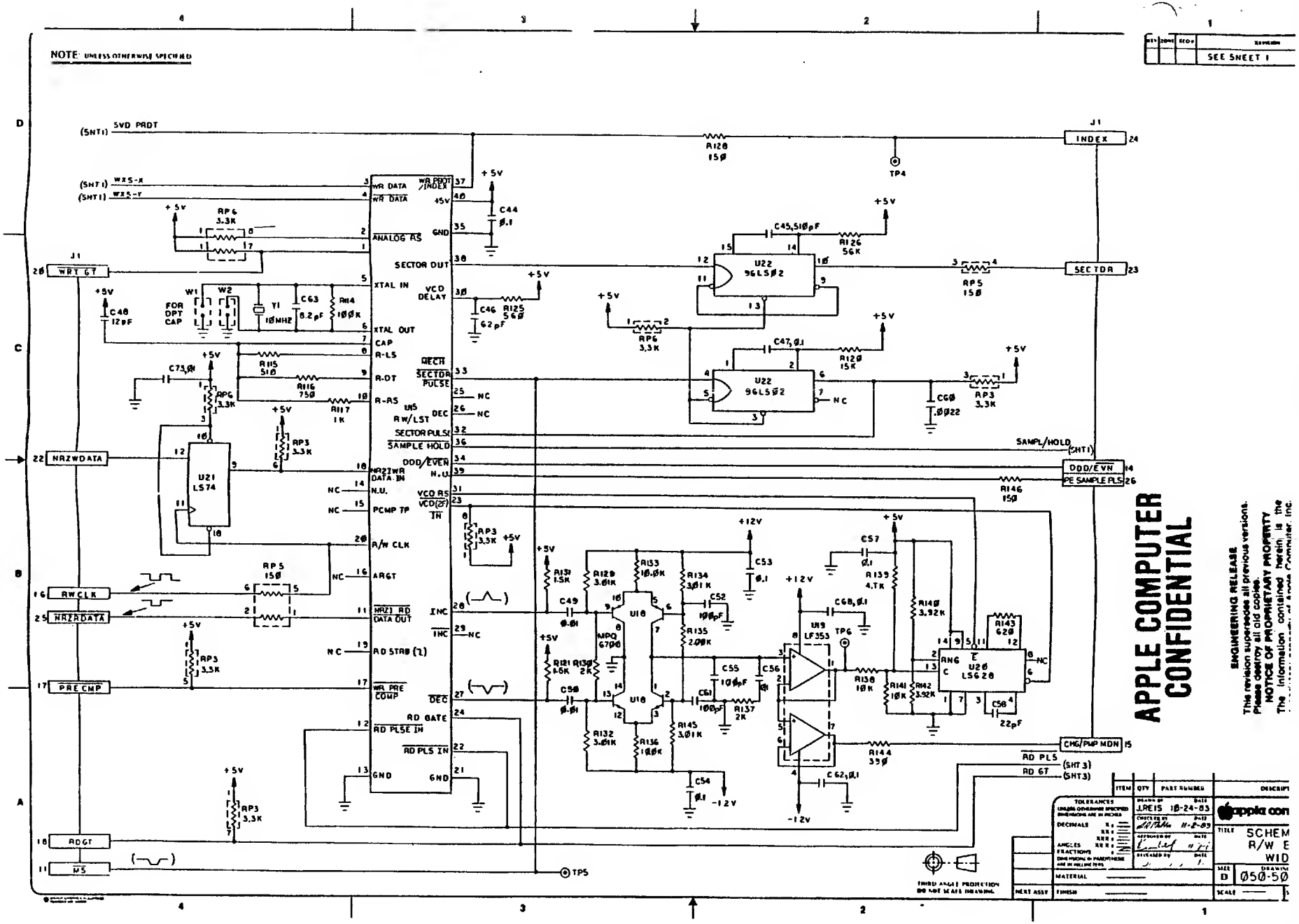
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

apple computer

TITLE SCHEMATIC, R/W BOARD, WIDGET

SIZE D | DRAWING NUMBER 050-5028-C

SCALE | SHEET 3 OF


NOTE: UNLESS OTHERWISE SPECIFIED
SEE SHEET 1
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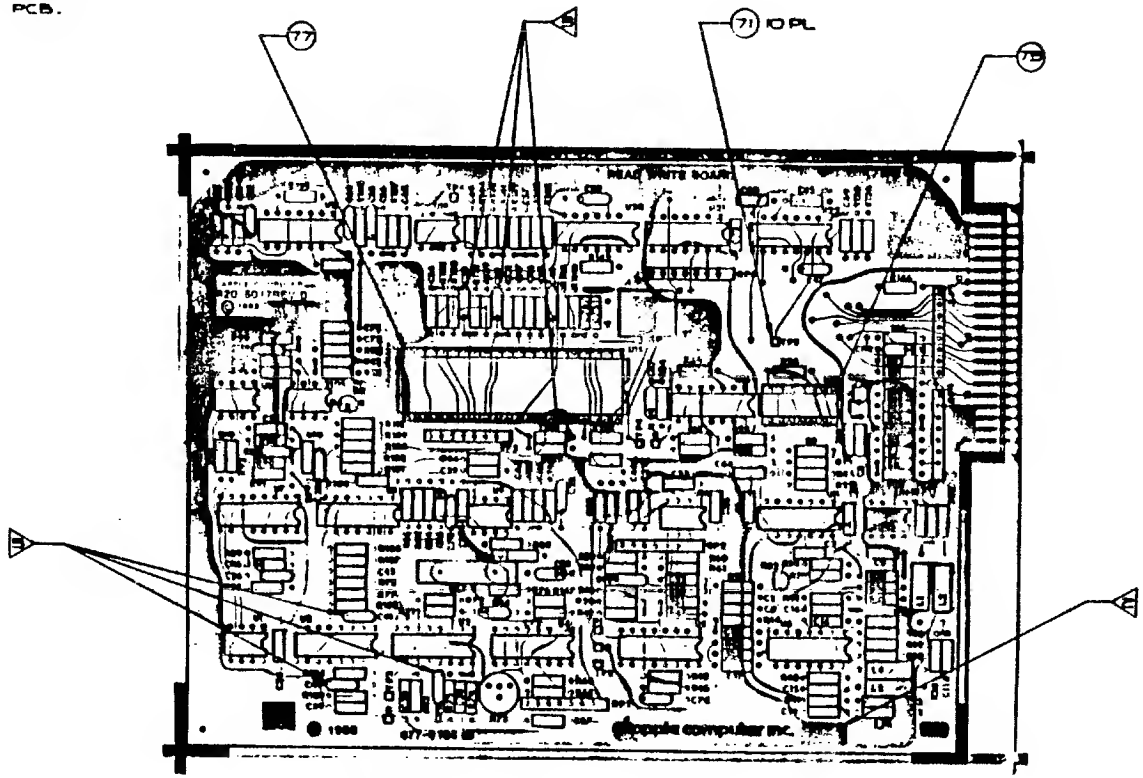
SVD PRDT
INDEX
SECTOR
WR DATA
WR GATE
ANALOG AS
SECTOR OUT
XTAL IN
XTAL OUT
CAP
R-LS
R-DT
R-AS
SECTOR PULSE
SAMPLE HOLD
ODD/EVEN
VCO AS
PCMP TP
R/W CLK
AR6T
RD STRB (1)
WR PRE COMP
RD GATE
RD PLSE IN
RD PLS IN
GND
WRT GT
NRZWDATA
RWCLK
NRZRDATA
PRE CMP
RDGT
MS
SAMPL/HOLD
ODD/EVN
PE SAMPLE PLS
CHG/PMP MDN
RD PLS
RD GT
TP4
TP5
TP6
U21 LS74
U22 96LS02
U5 R/W/LST DEC
U16
U19 LF353
U20 LS620
THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
apple computer
SCHEM
R/W E
WID
050-50

NOTE: UNLESS OTHERWISE SPECIFIED

1. REFERENCE SCHEMATIC : 050-5028 .
2. STAMP DATE TESTED GOOD .
3. CAPACITORS C29, 40, 41, 48, 49 & 50 ARE TO BE INSERTED NO HIGHER THAN .30 ± .05 INCH ABOVE PCB.

REV	ZONE	ECO #	DESCRIPTION	BY	DATE
K		9775	RELEASED AND RE-DRAWN WITH CHANGE		
L		9796	B.O.M CHANGE ONLY	SH MK	7/84



.580 REF

MAX COMPONENT CLEARANCE

SEE SEPARATE BILL OF MATL ; G77-0104

ITEM	QTY	PART NUMBER	DESCRIPTION

TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN MAJMAJC	DATE 5-8-84	apple computer inc
DECIMALS .X ±.1 .XX ±.01 .XXX ±.005	ENGR	DATE 6-8-84	
ANGLES ±0°1' FRACTIONS ±1/64	QUAL	DATE	TITLE ASSY, PCB UNTESTED READ/WRITE BOARD
INTERPRET GEOMETRIC TOLERANCING PER ANSI Y14.5M	MFG	DATE	WIDGET
MATERIAL			SIZE D G77-0104-L
NEXT ASSY	FINISH		SCALE 2X SHEET 1 OF 1

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0930
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0105                    EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                E
 ITM COMPONENT       DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
001 353-0319         IC, HIGH SPEED DUA ME  D 090183 123199 N        4.000 EA
002 359-0165         IC, L165 POWER OP  ME  D 090183 123199 N        2.000 EA
003 359-0291         IC, L291, 5 BIT D. ME  D 090183 123199 N        1.000 EA
004 353-0074         IC,TL074 LOW NOISE ME  D 090183 123199 N        1.000 EA
005 353-0444         IC, LF444, 4 SECTI ME  D 090183 123199 N        2.000 EA
006 359-4250         IC, 4250 PROGRAMMA ME  D 090183 123199 N        2.000 EA
007 353-0001         IC,4-CHANNEL PROGR ME  D 090183 123199 N        3.000 EA
008 327-0452         IC,75452,DUAL PERF ME  D 090183 123199 N        1.000 EA
009 353-0005         IC REG. +5V 100MA  ME  D 090183 123199 N        1.000 EA
010 305-0003         IC, 74LS03         ME  D 090183 123199 N        2.000 EA
011 305-0123         IC,74LS123         ME  D 090183 123199 N        1.000 EA
012 331-0086         IC,74HC86,QUAD EXC ME  D 090183 123199 N        1.000 EA
EXPLOSION LEVEL :    1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0930
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0105                    EFF: DATE        SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
014 342-0260         IC,MICRO-P W/ROM C ME  D 090183 112084 N        1.000 EA  Y
015 372-3904         TRANSISTOR,NPN SW. ME  D 090183 123199 N        8.000 EA
016 372-5640         TRANSISTOR, N-CHAN ME  D 090183 123199 N        1.000 EA
017 371-4148         DIODE FAST SWITCH  ME  D 090183 123199 N       11.000 EA
018 371-5236         DIODE ZENER 1N5236 ME  D 090183 123199 N        2.000 EA
019 371-5233         DIODE ZENER 1N5233 ME  D 090183 123199 N        2.000 EA
020 101-8100         RES 10 OHM 1/8W 5% ME  D 090183 123199 N        2.000 EA
021 101-8101         RES 100 OHM 1/8W 5 ME  D 090183 123199 N        2.000 EA
022 101-8151         RES 150 OHM 1/8W 5 ME  D 090183 123199 N        1.000 EA
023 101-8102         RES 1K OHM 1/8W 5% ME  D 090183 123199 N        6.000 EA
024 101-8432         RES 4.3K OHM 1/8W  ME  D 090183 123199 N        2.000 EA
025 101-8472         RES 4.7K OHM 1/8W  ME  D 090183 123199 N        2.000 EA
EXPLOSION LEVEL :    1
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```
 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0932
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

  SSY 677-0105                    EFF: DATE          SER NO          LOT NO
   T      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                E
 ITM COMPONENT       DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 026 101-8512        RES 5.1K OHM 1/8W    ME  D 090183 123199 N         2.000 EA
 027 101-8752        RES 7.5K OHM 1/8W    ME  D 090183 123199 N         2.000 EA
 028 101-8103        RES 10K OHM 1/8W 5   ME  D 110283 123199 N         9.000 EA
 029 101-8113        RES 11K OHM 1/8W 5   ME  D 090183 123199 N         1.000 EA
 030 101-8203        RES 20K OHM 1/8W 5   ME  D 090183 123199 N         1.000 EA
 031 101-8393        RES 39K OHM 1/8 5%   ME  D 090183 123199 N         2.000 EA
 032 101-8683        RES 68K OHM 1/8W 5   ME  D 090183 123199 N         1.000 EA
 033 101-8104        RES 100K OHM 1/8W    ME  D 090183 123199 N         1.000 EA
 034 101-8274        RES 270K OHM 1/8W    ME  D 090183 123199 N         1.000 EA
 035 101-8364        RES 360K OHM 1/8W    ME  D 090183 123199 N         2.000 EA
 036 101-8824        RES 820K OHM 1/8W    ME  D 090183 123199 N         2.000 EA
 037 103-0500        RES 2M OHM 1/8W 5%   ME  D 090183 123199 N         2.000 EA
 EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0933
 EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

 ASSY 677-0105                   EFF: DATE          SER NO          LOT NO
 PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                --EFFECTIVITY-- F                E
   1 COMPONENT       DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 038 106-3012        RES 301 OHMS 1/8W    ME  D 090183 123199 N         2.000 EA
 039 106-6982        RES 698 OHMS 1/8W    ME  D 090183 123199 N         2.000 EA
 040 106-1003        RES 1K OHM 1/8W 1%   ME  D 090183 123199 N         2.000 EA
 041 106-2493        RES 2.49K OHM 1/8W   ME  D 090183 123199 N         2.000 EA
 042 106-3013        RES 3.01K OHM 1/8W   ME  D 090183 123199 N         2.000 EA
 043 106-3653        RES 3.65K OHM 1/8W   ME  D 090183 123199 N         1.000 EA
 044 106-2433        RES 2.43K OHM 1/8W   ME  D 090183 123199 N         2.000 EA
 046 106-1004        RES 10K OHM 1/8W 1   ME  D 110283 123199 N         7.000 EA
 047 106-1104        RES 11K OHM 1/8W 1   ME  D 090183 123199 N         1.000 EA
 048 106-1244        RES 12.4K OHM 1/8W   ME  D 090183 123199 N         2.000 EA
 049 106-1404        RES 14.0K OHM 1/8W   ME  D 090183 123199 N         1.000 EA
 050 106-3014        RES 30.1K OHM 1/8W   ME  D 110283 123199 N         1.000 EA
 EXPLOSION LEVEL :   1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
```

```
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0934
 XPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH            STEP

 ASSY 677-0105                    EFF: DATE        SER NO          LOT NO
 PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                       ABBREVIATED                --EFFECTIVITY-- F                  E
 ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 051 106-3924          RES 39.2K OHM 1/8W ME  D 090183 123199 N        4.000 EA
 052 106-4024          RES 40.2K OHM 1/8W ME  D 090183 123199 N        2.000 EA
 053 106-4224          RES 42.2K OHM 1/8W ME  D 090183 123199 N        2.000 EA
 054 106-4324          RES 43.2K OHM 1/8W ME  D 090183 123199 N        2.000 EA
 055 106-4994          RES 49.9K OHM 1/8W ME  D 090183 123199 N        1.000 EA
 056 106-5904          RES 59.0K OHM 1/8W ME  D 090183 123199 N        2.000 EA
 057 106-6194          RES 61.9K OHM 1/8W ME  D 090183 123199 N        1.000 EA
 058 106-6494          RES 64.9K OHM 1/8W ME  D 090183 123199 N        2.000 EA
 059 105-0204          RES 1.5 OHM 2W 1%  ME  D 090183 123199 N        1.000 EA
 060 109-0008          POT, TRIM, 2K, 20% ME  D 090183 123199 N        1.000 EA
 061 112-0009          RES NETWORK 4 X 1K ME  D 090183 123199 N        1.000 EA
 062 111-0048          RES NETWORK 7 X 5. ME  D 090183 123199 N        1.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

 ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0935
 EXPLOD1             PART COMPONENTS EXPL INQ - 1              01PMH            STEP

 SSY 677-0105                     EFF: DATE        SER NO          LOT NO
 _T        MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                       ABBREVIATED                --EFFECTIVITY-- F                  E
 ITM COMPONENT         DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 063 112-0011          RES NETWORK 4 X 10 ME  D 090183 123199 N       13.000 EA
 064 130-0214          CAP CER 47 pF 10%  ME  D 090183 123199 N        1.000 EA
 065 130-0215          CAP CER 100 pF 20% ME  D 090183 123199 N        4.000 EA
 066 130-0216          CAP CER 560 pF 20% ME  D 090183 123199 N        1.000 EA
 067 130-0116          CAP CER AXIAL 680  ME  D 090183 123199 N        1.000 EA
 068 130-0117          CAP CER AXIAL 1500 ME  D 090183 123199 N        2.000 EA
 069 130-0118          CAP CER AXIAL 3300 ME  D 090183 123199 N        1.000 EA
 070 130-0010          CAP CER AXIAL .001 ME  D 090183 123199 N        3.000 EA
 071 130-0011          CAP CER AXIAL .01  ME  D 090183 123199 N        2.000 EA
 072 130-0012          CAP CER AXIAL .015 ME  D 090183 123199 N        2.000 EA
 073 130-0007          CAP CER AXIAL .1 U ME  D 110283 123199 N       32.000 EA
 074 137-5301          CAP DIP MICA 15 pF ME  D 090183 123199 N        2.000 EA
 EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **
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```
ABMDISP1      CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0936
EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH          STEP

ASSY 677-0105                        EFF: DATE        SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                  --EFFECTIVITY-- F                  E
 TM COMPONENT         DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
 75 120-0018          CAP POLYCARB .027    ME  D 090183 123199 N        1.000 EA
 76 120-0019          CAP POLYCARB .1 uF   ME  D 090183 123199 N        2.000 EA
078 120-0020          CAP POLYCARB .15 U   ME  D 090183 123199 N        1.000 EA
079 120-0021          CAP POLYCARB .18 u   ME  D 090183 123199 N        1.000 EA
080 125-6401          CAP ELECT 220 UF 1   ME  D 090183 110183 N        0.000 EA
081 125-6702          CAP ELECT 470 UF 1   ME  D 090183 123199 N        2.000 EA
082 151-6701          INDUCTOR, 470 uH 1   ME  D 090183 123199 N        2.000 EA
083 197-0026          CRYSTAL, 7.3728 MH   ME  D 090183 123199 N        1.000 EA
084 515-0005          CONN,PIN,SINGLE      ME  D 090183 123199 N       31.000 EA
085 511-4001          SOCKET, IC 40 PIN    ME  D 090183 123199 N        1.000 EA
086 511-1601          SOCKET, IC 16 PIN    ME  D 090183 123199 N        5.000 EA
087 511-1401          SOCKET, IC 14 PIN    ME  D 090183 123199 N        7.000 EA
EXPLOSION LEVEL :     1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1      CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0937
EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH          STEP

ASSY 677-0105                        EFF: DATE        SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                  --EFFECTIVITY-- F                  E
ITM COMPONENT         DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
088 511-0801          SOCKET, IC 8 PIN     ME  D 090183 123199 N        2.000 EA
 89 860-0093          STANDOFF,.250 DIAX   ME  D 090183 123199 N        2.000 EA
 90 800-5028          REIDENTIFIED AS 69   ME  D 090183 101683 N        0.000 EA
091 820-5015          PCB,SERVO,WIDGET     ME  D 110283 123199 N        1.000 EA
092 400-1404          SCR 4-40X1/4 PN HD   ME  D 090183 110183 N        0.000 EA
093 860-0263          SPACER, HEX 4-40 X   ME  D 090183 110183 N        0.000 EA
094 699-5007          SHIELD,SERVO BD.,W   ME  D 090183 110183 N        0.000 EA
095 130-0106          CAP CER AXIAL 470    ME  D 110283 123199 N        1.000 EA
096 101-8332          RES 3.3K OHM 1/8W    ME  D 110283 123199 N        1.000 EA
097 860-0090          STANDOFF,.250 DIA    ME  D 110283 123199 N        3.000 EA
098 101-4330          RES 33 OHM 1/4W 5%   ME  D 110283 123199 N        1.000 EA
099 125-6402          CAP ELECT 220 UF 1   ME  D 110283 123199 N        3.000 EA
EXPLOSION LEVEL :     1

NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1      CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85 <0938it >>
EXPLOD1              PART COMPONENTS EXPL INQ - 1              01PMH          STEP

ASSY 677-0105                        EFF: DATE        SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                  --EFFECTIVITY-- F                  E
ITM COMPONENT         DESCRIPTION          MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
100 341-0302          IC,28 SERVO,MASKED   ME  D 112184 123199 N        1.000 EA
999 050-5026          SHEMATIC,SERVO BD.   ME  D 090183 123199 N        0.000 EA
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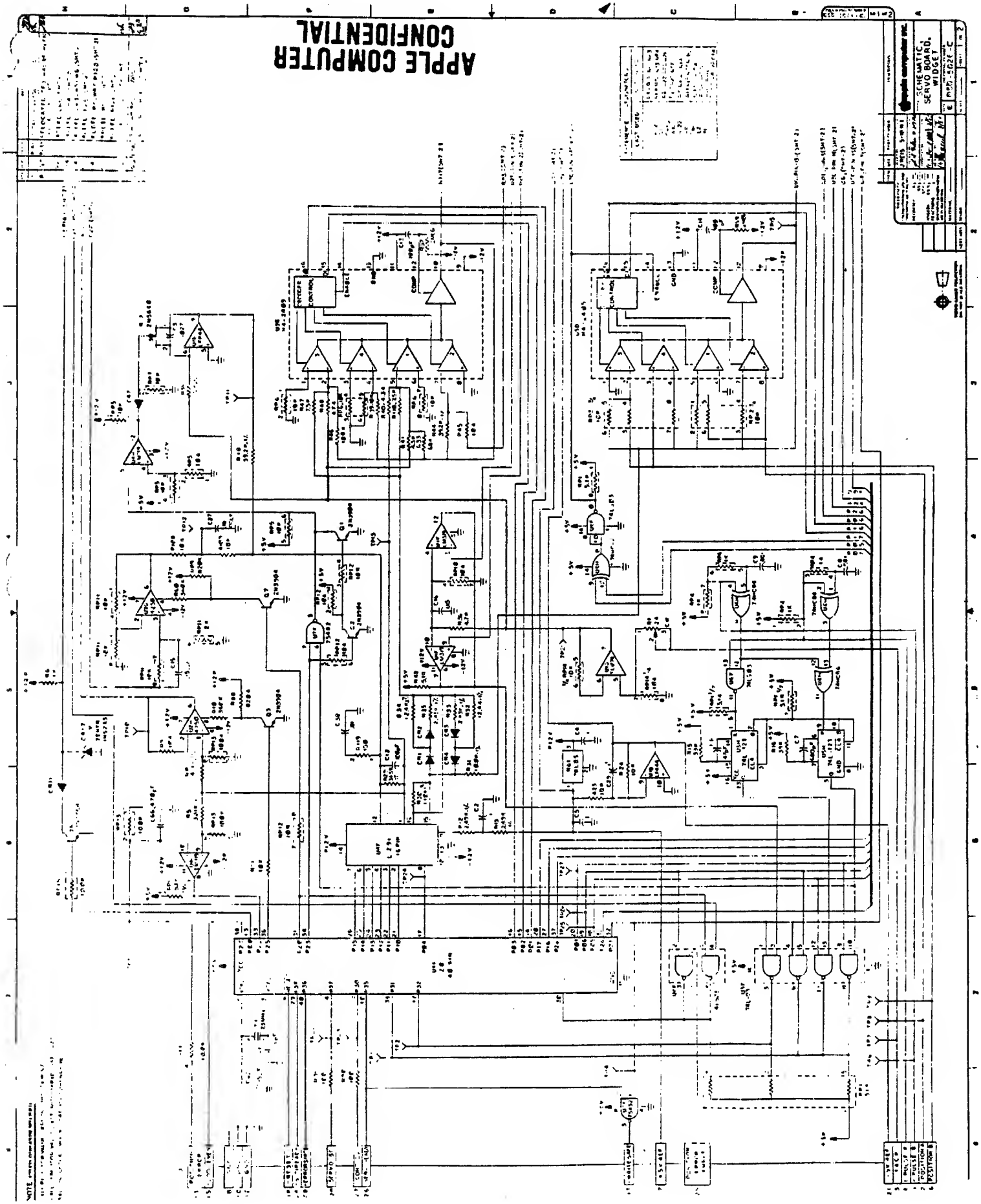

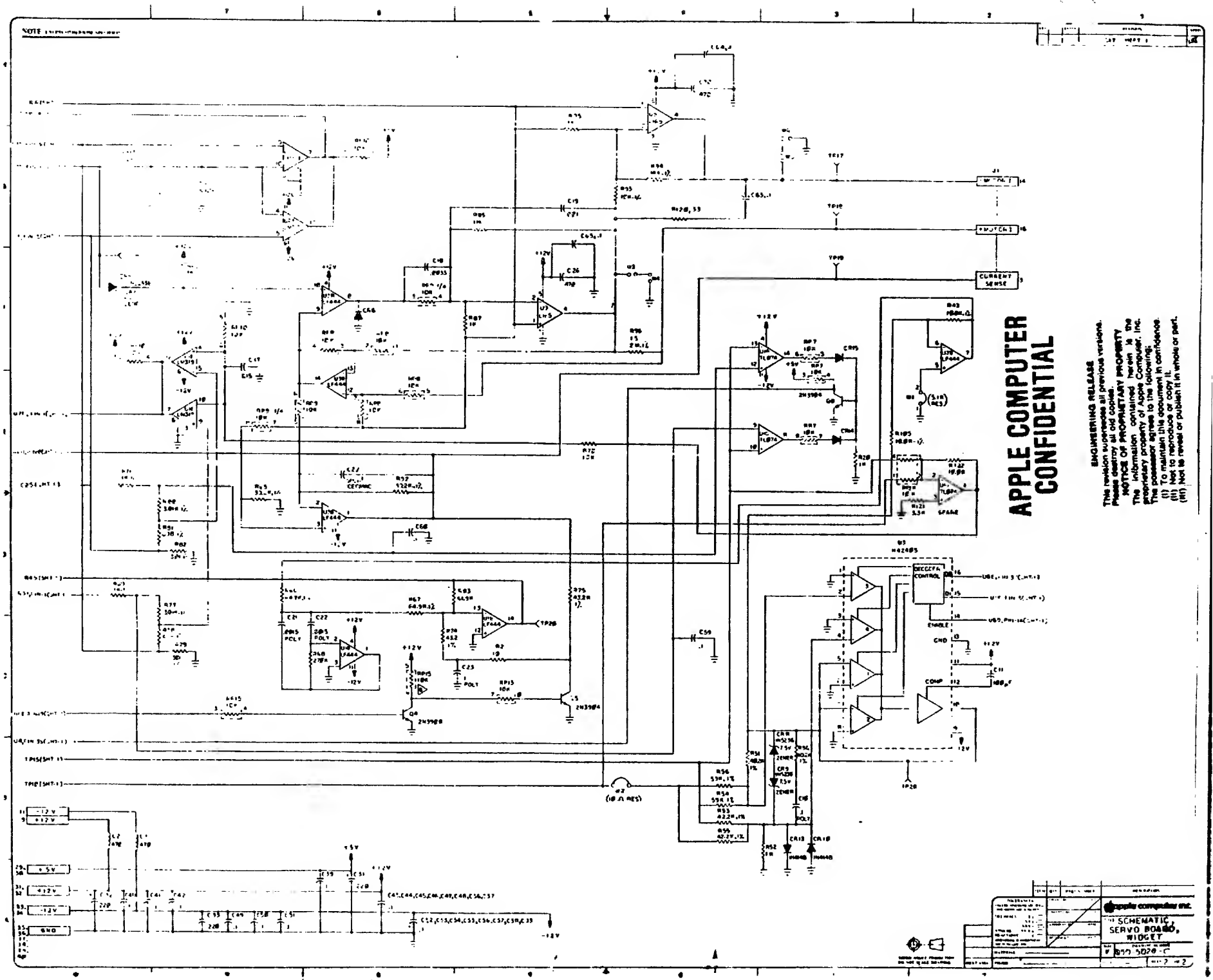
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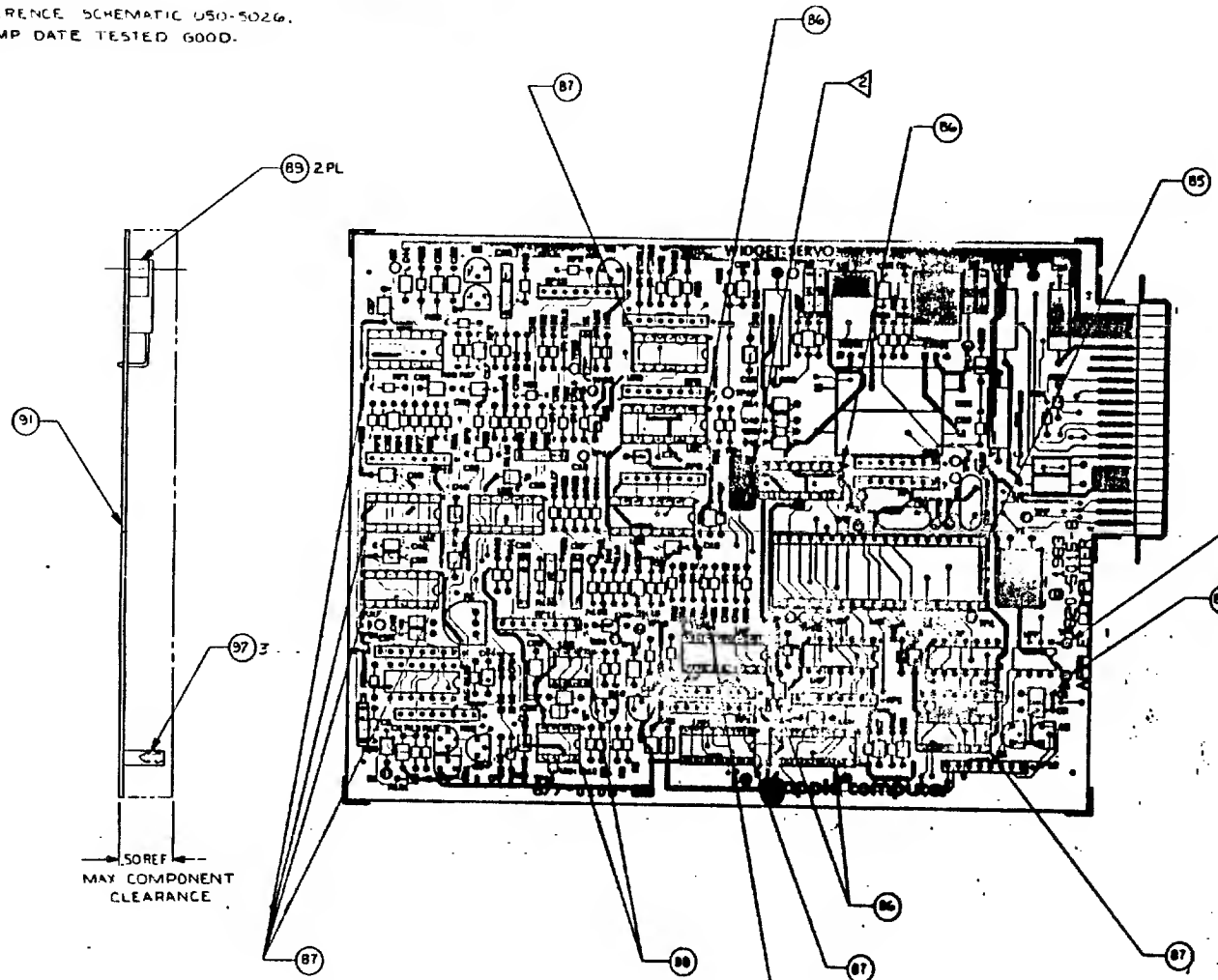
SCHEMATIC
SERVO BOARD,
WIDGET
820-5020-C

NOTE: UNLESS OTHERWISE SPECIFIED

1. REFERENCE SCHEMATIC 050-5026.

2. STAMP DATE TESTED GOOD.

REV	ZONE	ECO	DESCRIPTION	BY	DATE
C		7635	REVISED & REDRAWN		
D	3B		R8, 49.9K, 1% WAS R8, 30.1K, 1%		
	2B	7746	REMOVED SOCKETS U6F, U5F AND U1G FROM ITEM 87, U7F FROM ITEM 88		
E		7834	B.O.M. CHANGE ONLY		



SEE SEPARATE BILL OF MATL 677-0105

DRAWN	J. REIS	12-21-83	apple computer inc.
TITLE	ASSEMBLY, PCB, SERVO CONTROL, UNTESTED, WIDGET		
SIZE	D	DRAWING NUMBER	677-0105-E
SCALE	2X	SHEET	1 OF 1

677-0105-E

```
ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0912
EXPLOD1                PART COMPONENTS EXPL INQ - 1           01PMH          STEP

ASSY 677-0108                          EFF: DATE          SER NO          LOT NO
 LT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                    --EFFECTIVITY--  F              E
 TM COMPONENT        DESCRIPTION          MOD TYP FROM    THRU    Q QTY PER ASSY UOM X
001 337-8603         IC SOCKET MICROPRO   ME  D 100383 123199 N          1.000 EA
002 341-0268         REIDENTIFIED, SEE    ME  D 100383 123199 N          1.000 EA
003 341-0264         IC, GA CONTROL       ME  D 100383 123199 N          1.000 EA
004 341-0262         IC,GATE ARRAY ECC    ME  D 100383 123199 N          1.000 EA
005 333-6116         IC,RAM,STATIC 2Kx8   ME  D 100383 123199 N          1.000 EA
006 341-0289         IC,ROM/EPROM,CUSTO   ME  D 100383 123199 N          1.000 EA
007 305-0000         IC, 74LS00N          ME  D 100383 123199 N          1.000 EA
008 305-0009         IC, 74LS08           ME  D 100383 123199 N          1.000 EA
009 305-0032         IC, 74LS32           ME  D 100383 123199 N          2.000 EA
010 305-0259         IC, 74LS259          ME  D 100383 123199 N          1.000 EA
011 297-0240         IC,74HCT240,OCTAL    ME  D 100383 123199 N          1.000 EA
012 378-0003         LED, GREEN           ME  D 100383 123199 N          1.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0913
EXPLOD1                PART COMPONENTS EXPL INQ - 1           01PMH          STEP

ASSY 677-0108                          EFF: DATE          SER NO          LOT NO
PLT      MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                     ABBREVIATED                    --EFFECTIVITY--  F              E
 TM COMPONENT        DESCRIPTION          MOD TYP FROM    THRU    Q QTY PER ASSY UOM X
013 375-0050         DIODE,ARRAY,7 PIN,   ME  D 100383 123199 N          3.000 EA
014 111-0017         RES NETWORK 9 X 3.   ME  D 100383 123199 N          3.000 EA
015 112-0015         RES NETWORK 4 X 10   ME  D 100383 123199 N          5.000 EA
016 137-5301         CAP DIP MICA 15 pF   ME  D 100383 053184 N          0.000 EA
017 130-0007         CAP CER AXIAL .1 U   ME  D 100383 123199 N         14.000 EA
018 127-0005         CAP TANT 22 uF 20%   ME  D 100383 123199 N          1.000 EA
019 515-0185         CONN,HDR,STR,SHRD,   ME  D 100383 123199 N          1.000 EA
020 R60-0421         STANDOFF,RND THRU    ME  D 100383 123199 N          4.000 EA
021 511-1401         SOCKET, IC 14 PIN    ME  D 100383 123199 N          4.000 EA
022 511-1601         SOCKET, IC 16 PIN    ME  D 100383 123199 N          3.000 EA
023 511-2001         SOCKET, IC 20 PIN    ME  D 100383 123199 N          1.000 EA
024 511-2401         SOCKET, IC 24 PIN    ME  D 100383 123199 N          1.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **
```

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ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0913
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0108                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                  E
 ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
   5 511-2801         SOCKET, IC 28 PIN  ME  D 100383 123199 N        1.000 EA
026 511-4001         SOCKET, IC 40 PIN  ME  D 100383 123199 N        1.000 EA
027 511-6805         SOCKET,LEADLESS CH ME  D 100383 123199 N        1.000 EA
028 515-0005         CONN,PIN,SINGLE    ME  D 100383 123199 N        1.000 EA
029 197-0026         CRYSTAL, 7.3728 MH ME  D 100383 123199 N        9.000 EA
030 946-0000         TAPE, FOAM, DOUBLE ME  D 100383 123199 N        1.000 EA
031 400-1208         SCR 2-56X1/2 PN HD ME  D 100383 123199 N        0.000 RL
032 835-0152         NUT/WASHER ASSY, ( ME  D 100383 123199 N        2.000 EA
033 101-4332         RES 3.3K OHM 1/4W  ME  D 100383 123199 N        2.000 EA
034 101-4241         RES 240 OHM 1/4W 5 ME  D 100383 123199 N        4.000 EA
035 515-0046         CONN,HDR,RT ANG,8P ME  D 041384 123199 N        2.000 EA
036 515-0111         CONN,HDR,RT ANG,13 ME  D 100383 123199 N        1.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0914
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0108                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                  E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
037 101-4102         RES 1K OHM 1/4W 5% ME  D 100383 123199 N        1.000 EA
038 101-4512         RES 5.1K OHM 1/4W  ME  D 100383 123199 N        1.000 EA
039 305-0157         IC, 74LS157        ME  D 100383 123199 N        1.000 EA
040 515-0160         CONN,HDR,RT ANG,2P ME  D 100383 123199 N        1.000 EA
041 515-0053         CONN,HDR,STR,2P    ME  D 100383 123199 N        1.000 EA
042 130-0209         CAP CER 330 pF 5%  ME  D 100383 123199 N        1.000 EA
043 820-5016         PCB,LISA WIDGET CO ME  D 100383 123199 N        1.000 EA
044 305-0240         IC, 74LS240        ME  D 041384 123199 N        0.000 EA
045 515-0151         CONN,HDR,RT ANG,8P ME  D 010101 041284 N        0.000 EA
046 130-0129         CAP CER AXIAL 8.2  ME  D 060184 123199 N        2.000 EA
047 515-0370         CONN,HDR,STR,UNSHR ME  D 060184 123199 N        1.000 EA
048 137-6101         CAP DIP MICA 100 p ME  D 090584 123199 N        1.000 EA
EXPLOSION LEVEL :    1

 NEXT RESPONSE : EXPLOD1    NEXT KEY :
DC700011 MORE                          **

ABMDISP1     CULLINET MANUFACTURING SYSTEM - GAMMA 1.1        08/15/85  0915
EXPLOD1              PART COMPONENTS EXPL INQ - 1             01PMH            STEP

ASSY 677-0108                      EFF: DATE          SER NO          LOT NO
PLT       MODEL     SEQ(I,C) I  SKIP TO ITEM/COMPONENT
                      ABBREVIATED                --EFFECTIVITY-- F                  E
ITM COMPONENT        DESCRIPTION        MOD TYP FROM   THRU   Q QTY PER ASSY UOM X
999 050-5027         SCHEMATIC,LISA WID ME  D 100383 123199 N        0.000 EA
```
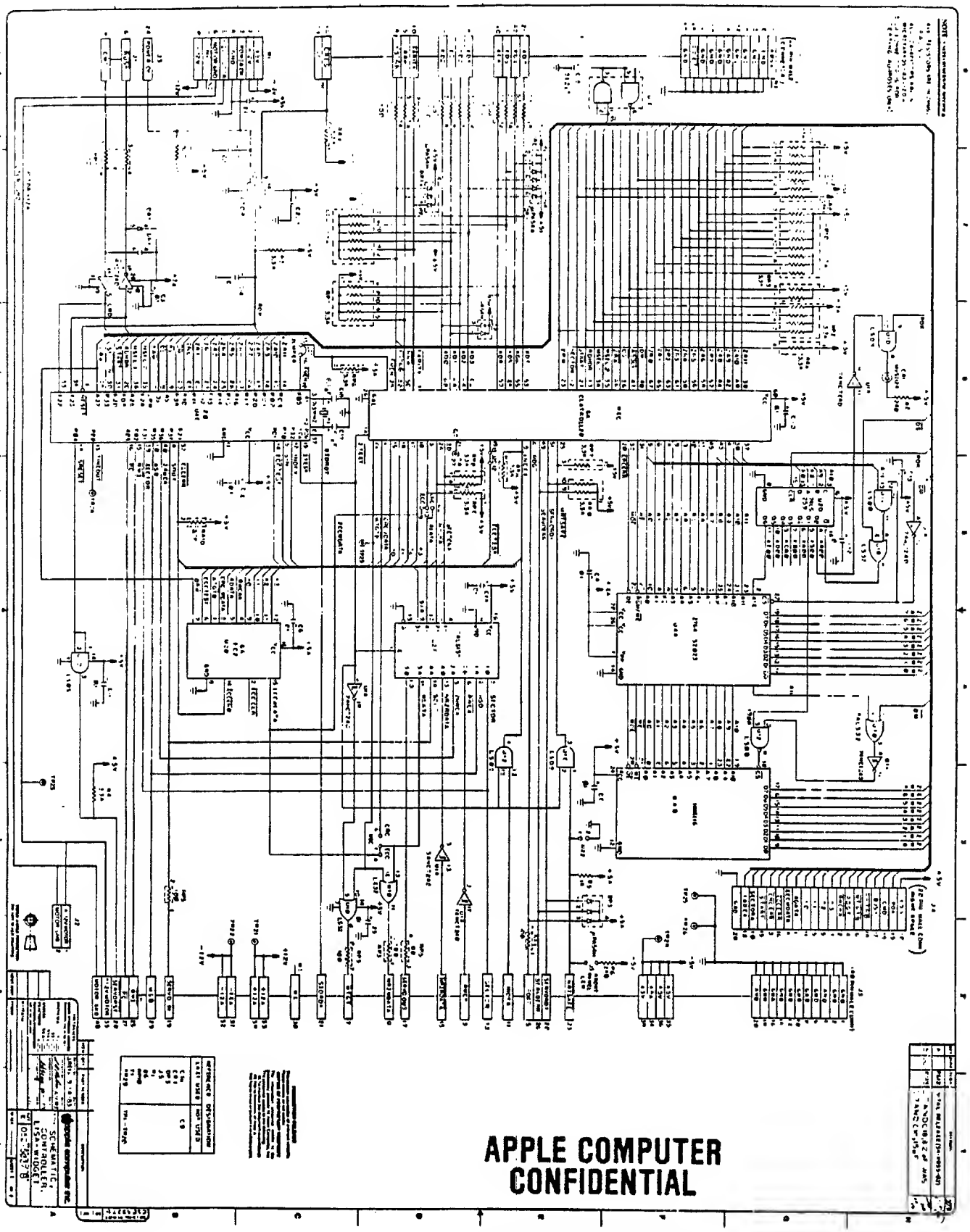



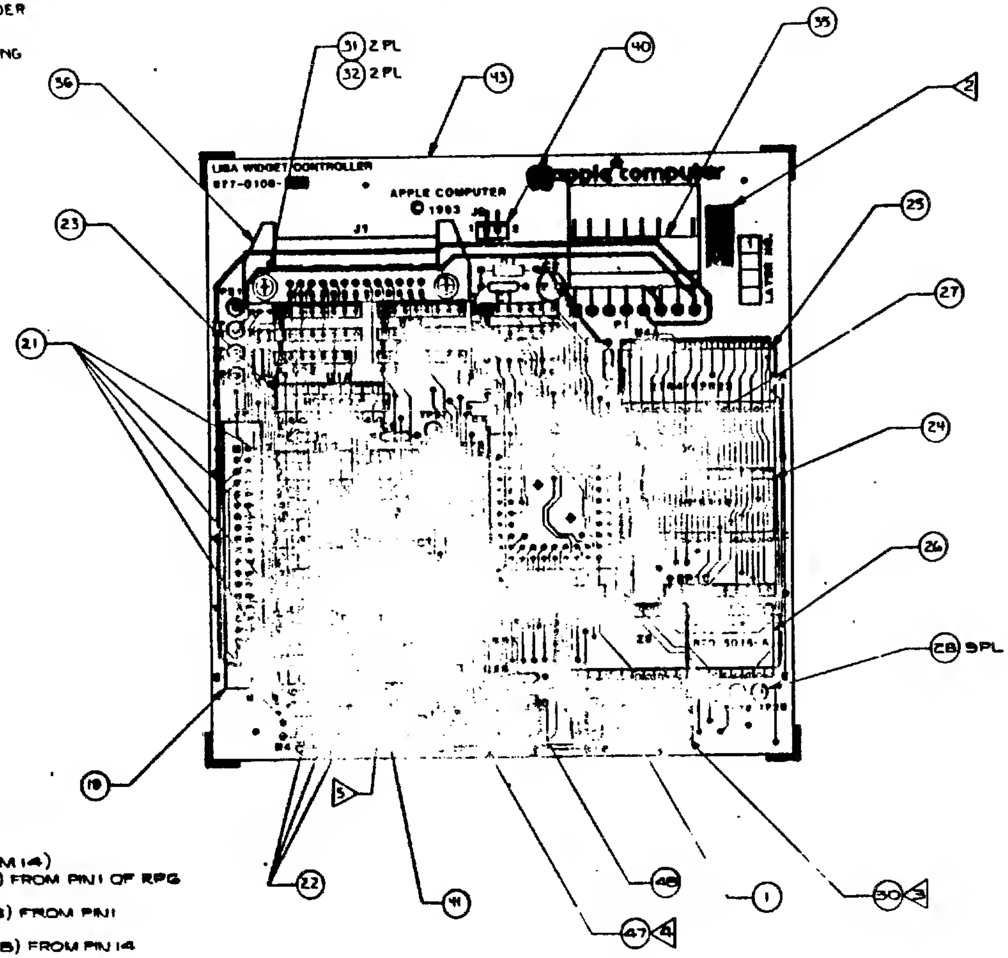
APPLE COMPUTER CONFIDENTIAL

ENGINEERING RELEASE

This revision supersedes all previous versions.
Please destroy all old copies.

NOTES: UNLESS OTHERWISE SPECIFIED

1. REFERANCE SCHEMATIC: 050-5027-A
2. STAMP DATE TEST GOOD.
3. MOUNT ITEM 30 (FOAM TAPE) UNDER ITEM 29 (Y1, CRYSTAL).
4. ITEM 47 (20 PIN HEADER) IS FOR TESTING PURPOSES ONLY.
5. C9 TO REMAIN OPEN (CAPACITOR NOT REQD).



REV	ZONE	DESCRIPTION
B	40	ADD...
	3A	ADD...
	4A	ADDED ... INSTRUCTI...
C	3B	ADDED C20 (I...
	3C	ADDED R7 & R8 (ITM 33) REMOVED RPG & RP7

REWORK INSTRUCTIONS:

1. REMOVE RPG & RP7 (111-0017, ITM 14)
2. ADD 3.3K RES. (101-4332, ITM 33) FROM PIN 1 OF RPG TO PIN 2 OF RP7, REF. DES. R7.
3. ADD 3.3K RES. (101-4332, ITM 33) FROM PIN 1 TO PIN 3 OF RP7, REF DES R8.
4. ADD 100 pF CAP (157-6101, ITM 48) FROM PIN 14 TO PIN 20 OF J4, REF DES. C80.

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

apple computer

TITLE ASSY, PCB, UNTESTED CONTROLLER WIDGET/LISA

DRAWN BY J. REIS 11-18-83

SIZE D 677-0108-C

SCALE NONE SHEET 1